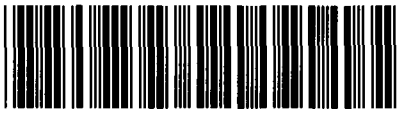

Control Number: 46256

Item Number: 1726

Addendum StartPage: 0

**SOAH DOCKET NO. 473-17-1641.WS**
**PUC DOCKET NO. 46256**



| | | |
|---|---|---|
| **APPLICATION OF LIBERTY UTILITIES (WOODMARK SEWER) CORP., LIBERTY UTILITIES (TALL TIMBERS SEWER) CORP., LIBERTY UTILITIES (SUB) CORP. TO CHANGE RATES FOR SEWER SERVICES IN SMITH COUNTY, TEXAS** | § | **BEFORE THE PUBLIC UTILITY COMMISSION OF TEXAS** |

## LIBERTY UTILITIES' SUPPLEMENTAL RESPONSE TO CITY OF TYLER'S TENTH REQUEST FOR INFORMATION

To: City of Tyler, Texas, by and through its attorney of record, Joe Freeland, Mathews and Freeland, 8140 N. MoPac Expy, Suite 2-260, Austin, Texas 78759.

Liberty Utilities (Tall Timbers Sewer) Corp., Liberty Utilities (Woodmark Sewer) Corp., and Liberty Utilities (Sub) Corp. ("Liberty Utilities") provide this supplemental response to the City of Tyler's Tenth Requests for Information to Liberty Utilities. Liberty Utilities stipulates that the following response to requests for information may be treated by all parties as if the answer was filed under oath. Documents marked as voluminous will be available for inspection by appointment at Terrill & Waldrop, 810 West 10th Street, Austin, Texas 78701.

17216

Respectfully submitted,

By: _____

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**ATTORNEYS FOR LIBERTY UTILITIES (TALL TIMBERS SEWER) CORP., LIBERTY UTILITIES (WOODMARK SEWER) CORP., LIBERTY UTILITIES (SUB) CORP.**

## CERTIFICATE OF SERVICE

I certify that a copy of this document will be served on all parties of record on July 21, 2017 in accordance with P.U.C. Procedural Rule 22.74.

_____
Shan S. Rutherford

## RESPONSE TO REQUEST FOR INFORMATION

**TYLER RFI 10-10** Please identify all Liberty Utilities employees residing in Smith County, Texas.

**RESPONSE:** Please see attached document:
Tyler 10-10 List of Smith County Employees Confidential.pdf

Prepared by Gerry Becker, Manager Rates and Regulatory

Sponsored by Gerry Becker, Manager Rates and Regulatory

## RESPONSE TO REQUEST FOR INFORMATION

**TYLER RFI 10-31** Referencing the direct testimony of Crystal Greene, Page 4, Lines 6-11, please identify all documents reviewed by Ms. Greene supporting her statement that Liberty Utilities relied on the values produced by the prior owner during due diligence.

**RESPONSE:** Ms. Greene reviewed company records, the trial balance, the acquisition agreements, the general ledger and other similar accounting documents. Further, Ms. Green relied on accounting practices and provisions in the NARUC Uniform System of Accounts. It is common practice to carry forward the prior owner's plant balances following acquisition. Upon acquisition of Woodmark/Tall Timbers in 2002, Liberty Utilities carried the utility's original plant balances on the books from the acquisition. NARUC Uniform System of Accounts Instruction 21(b) provides that "[t]he original cost of plant, estimated if not known, shall be credited to account 104..." See also NARUC Accounting Instruction 21(f)("When utility plant constituting an operating unit or system is sold, conveyed, or transferred to another by sale, merger, consolidation, or otherwise, the book cost of the property sold or transferred to another shall be credited to the appropriate utility plant accounts, including amounts carried in account 114 – Utility Plant Acquisition Adjustments, and the amounts (estimated if not known) carried with respect thereto in the accounts for accumulated depreciation and amortization and in account 252 - Advances for Construction, and account 271 - Contributions in Aid of Construction, shall be charged to such accounts and the contra entries made to account 104 - Utility Plant Purchased or Sold."; 17(C)("The detailed utility plant accounts (351 to 398, inclusive) shall be stated on the basis of cost to the utility of plant constructed by it and the original owner, estimated if not known, of plant acquired as an operating unit or system... The original cost utility plant shall be determined by analysis of the utility's records or those of predecessor vendor companies with respect to utility plant previously acquired as operating units or systems...")

Prepared by Crystal Greene, Director Financial Planning and Analysis (West Region)

Sponsored by Crystal Greene, Director Financial Planning and Analysis (West Region)

## RESPONSE TO REQUEST FOR INFORMATION

**TYLER RFI 10-34** Referencing the rebuttal testimony of Matthew Garlick, Page 5, Lines 18-19, please identify and quantify the "operational efficiencies" to which Mr. Garlick testifies.

**RESPONSE:** Liberty Utilities anticipates operational efficiencies of approximately $735 per month reduction in sludge hauling expenses, approximately $365 per month reduction in chemical costs and approximately $115 monthly in labor and gas savings.

Prepared by Matthew Garlick, President AZ/TX

Sponsored by Matthew Garlick, President AZ/TX

## RESPONSE TO REQUEST FOR INFORMATION

**TYLER 10-35** Referencing the rebuttal testimony of Matthew Garlick, Page 5, Lines 22-24, please provide the basis and supporting documentation behind the $3.2 million figure cited by Mr. Garlick. Please itemize this cost between ?redundancy requirements, design, cost of easements, and other similar factors?.

**RESPONSE:** Please see attached document not including redundancy line and equipment.

Prepared by Matthew Garlick, President AZ/TX

Sponsored by Matthew Garlick, President AZ/TX

## RESPONSE TO REQUEST FOR INFORMATION

**TYLER RFI 10-37** Referencing the rebuttal testimony of Matthew Garlick, Page 6, Lines 26-27, please provide all documentation that supports his claim "Liberty Utilities considered the possibility of purchasing treatment capacity from Tyler."

**RESPONSE:** See response to Tyler RFI 10-36.

Prepared by Matthew Garlick, President, AZ/TX

Sponsored by Matthew Garlick, President, AZ/TX

## RESPONSE TO REQUEST FOR INFORMATION

**TYLER RFI 10-38** Referencing the testimony of Matthew Garlick, Page 11, Lines 23-24, please provide the dates and the entities or persons to which the requests for a "firm and specific price applicable to permanent treatment capacity from Tyler" were made.

**RESPONSE:** See response to Tyler RFI 10-36.

Prepared by Matthew Garlick, President, AZ/TX

Sponsored by Matthew Garlick, President, AZ/TX

## RESPONSE TO REQUEST FOR INFORMATION

**TYLER RFI 10-39** Referencing the rebuttal testimony of Matthew Garlick, Page 12, Lines 20-23, please describe where in Mr. Morgan's testimony and in the comment letters filed with TCEQ did Tyler acknowledge its "intent" to become the retail wastewater provider for all of the Liberty Tall Timbers and Liberty Woodmark service areas.

**RESPONSE:** Mr. Morgan made that representation to Mr. Garlick and Mr. Becker at a meeting in Tyler City Hall in October 2016. Further, Mr. Morgan stated on page 14 of his direct testimony, "Tyler has long believed that the state's policies regarding regionalization would best be met if Tyler provided regional wastewater treatment for itself and the surrounding retail sewer providers, such as Liberty Utilities." While Mr. Morgan's testimony focuses on wastewater treatment, the treatment is a significant part of the provision of wastewater service.

Prepared by Gerry Becker, Manager Rates and Regulatory

Sponsored by Matthew Garlick, President AZ/TX

## RESPONSE TO REQUEST FOR INFORMATION

**TYLER RFI 10-41** Referencing Exhibit MG-R-8, please provide the cover page from the Smith County Clerk's Office for this filing similar to the cover page at LU 031281.

**RESPONSE:** Liberty Utilities does not have in its possession a cover page from the Smith County Clerk's office for the referenced document.

Prepared by Gerry Becker, Manager, Rates and Regulatory

Sponsored by Matthew Garlick, President, AZ/TX

## RESPONSE TO REQUEST FOR INFORMATION

**TYLER RFI 10-44** Referencing the rebuttal testimony of Matthew Garlick, Page 25, Line 4-5, please explain the "problems" Liberty Utilities has encountered in "determining the logistics and costs required for such data sharing with Southern Utilities."

**RESPONSE:** As Liberty Utilities has stated from the beginning, Liberty Utilities is a wastewater provider and not the water provider in the area. In order for Liberty Utilities to provide a rate methodology other than the current methodology, Liberty Utilities requires water volume data from both the City of Tyler and Southern Utilities.

Beginning in November 2016, Liberty Utilities has been engaged with Southern Utilities in seeking to obtain volumetric data. During this process, Liberty Utilities determined that significant, time-consuming work regarding aligning of customer information against two different databases as well as building software programing to create those lists on a monthly basis. In addition, the Public Utilities Commission requires an agreement between parties be submitted and approved by the Commission prior to data being shared.

Liberty Utilities is pleased to announce that an agreement with Southern Utilities has been signed and programing is now nearing completion. The required submission to the Commission was made in June 2017 and Liberty Utilities is awaiting approval of the release of the data.

It is Liberty Utilities' understanding that once the approval is given by the PUC, access to volumetric information will allow Liberty Utilities the ability to develop volumetric billing.

Prepared by Matthew Garlick, President AZ/TX

Sponsored by Matthew Garlick, President AZ/TX

## RESPONSE TO REQUEST FOR INFORMATION

**TYLER RFI 10-45** Referencing the rebuttal testimony of Matthew Garlick, Page 26, Lines 17-18, please provide a copy of and all supporting workpapers associated with the "comprehensive study" that is referenced.

**RESPONSE:** The term "comprehensive study" does not refer to a third party study but rather an internal comprehensive study of the possible billing errors to in-City customers. The comprehensive study or review was designed to insure correct customer billing.

Back in the 2002-2003 timeframe, Liberty Utilities received complaints from the City and customers regarding possible billing system errors. Liberty Utilities identified incorrect rates were being applied to certain in-City customers. Liberty Utilities immediately corrected those billing errors and returned any overbillings back to the customers, as well as immediately re-trained staff to ask customers questions to better identify where customers live within the Tall Timbers service area, such as, "Do you pay City of Tyler Property Taxes?" This training allowed Liberty Utilities to be better able to ensure that customers within the City of Tyler would be billed the correct rate.

Because the City of Tyler city limits expand every few years further into Tall Timbers service area, and the fact that once raw land gets developed and no street address information is available creates difficulties in preventing incorrect billings. Liberty Utilities in its comprehensive review made significant efforts to insure proper billing occurs through several different customer service activities which include: 1) customer service representatives asking questions about location of the customer's residence such as property taxing authority or the name of your subdivision; 2) customer service review of its system and maintenance of a list of active customer addresses within each Utility and updates monthly; 3) monthly reviews of new communities to insure Liberty Utilities knows what is happening within the surrounding community; and 4. obtaining the City's most current planning document so that Liberty Utilities has a better idea of what areas are or have potential to be located within the City's boundaries.

It should be noted that in 2016, 3 or 4 customers were identified as non-paying customers in which these customers were found to be paying City of Tyler sewer bills in situations where Liberty Utilities was the sewer provider. The customers went back to the City of Tyler for a refund and then paid Liberty Utilities for the services Liberty Utilities was providing and not the City of Tyler.

Prepared by Matthew Garlick, President AZ/TX

Sponsored by Matthew Garlick, President AZ/TX

## RESPONSE TO REQUEST FOR INFORMATION

**TYLER RFI 10-50** Please provide a copy of the document "Contribution in Aid of Construction ("CIAC") – Rockpoint Unit 3," included in the letter from Liberty Utilities to Jerry Fackrill dated January 11, 2017.

**RESPONSE:** Please see attached file:
Tyler 10-50 Jerry Fackrell letter 1-11-17.pdf

Prepared by Steve Carlson, Manager Development Services and Gerry Becker, Manager, Rates and Regulatory.

Sponsored by Matthew Garlick, President, AZ/TX

## RESPONSE TO REQUEST FOR INFORMATION

**TYLER RFI 10-51** Please provide documentation supporting Liberty Utilities' determination of the estimated cost of the future expansion of the Tall Timbers plant as $3,521,000 as set out in the document "Contribution in Aid of Construction ("CIAC") – Rockpoint Unit 3, dated January 11, 2017."

**RESPONSE:** The basis of the estimate for a Tall Timbers expansion was the estimated costs of expanding the Woodmark WWTP as reflected in the Application. The final accounting for the Woodmark WWTP expansion has also been provided to the parties.

Prepared by Steve Carlson, Manager Development Services and Gerry Becker, Manager Rates and Regulatory

Sponsored by Matthew Garlick, President, AZ/TX

## RESPONSE TO REQUEST FOR INFORMATION

**TYLER RFI 10-52** Referencing Exhibit GMM-7, please provide all documentation supporting Liberty Utilities' determination of the "stated Capacity Costs of $3,000 per EDU is based off of current costs incurred by Liberty."

**RESPONSE:** Please see attached file:
Tyler 1-52 Calculation Tall Timbers charge.xls.

Prepared by Bhaskar Kolluri, Project Manager, and Steve Carlson, Manager, Development Services

Sponsored by Matthew Garlick, President, AZ/TX and Gerry Becker, Manager, Rates and Regulatory

## RESPONSE TO REQUEST FOR INFORMATION

**TYLER RFI 10-60** Provide the bills of sale or other conveyance documents reflecting Tall Timbers' purchase of the two package plants.

**RESPONSE:** The requested documents were not obtained from the original owners of Tall Timbers at the time of the stock purchase. Their existence or location today is unknown.

Prepared by Mark Zeppa, Attorney for applicants

Sponsored by Mark Zeppa, Attorney for applicants

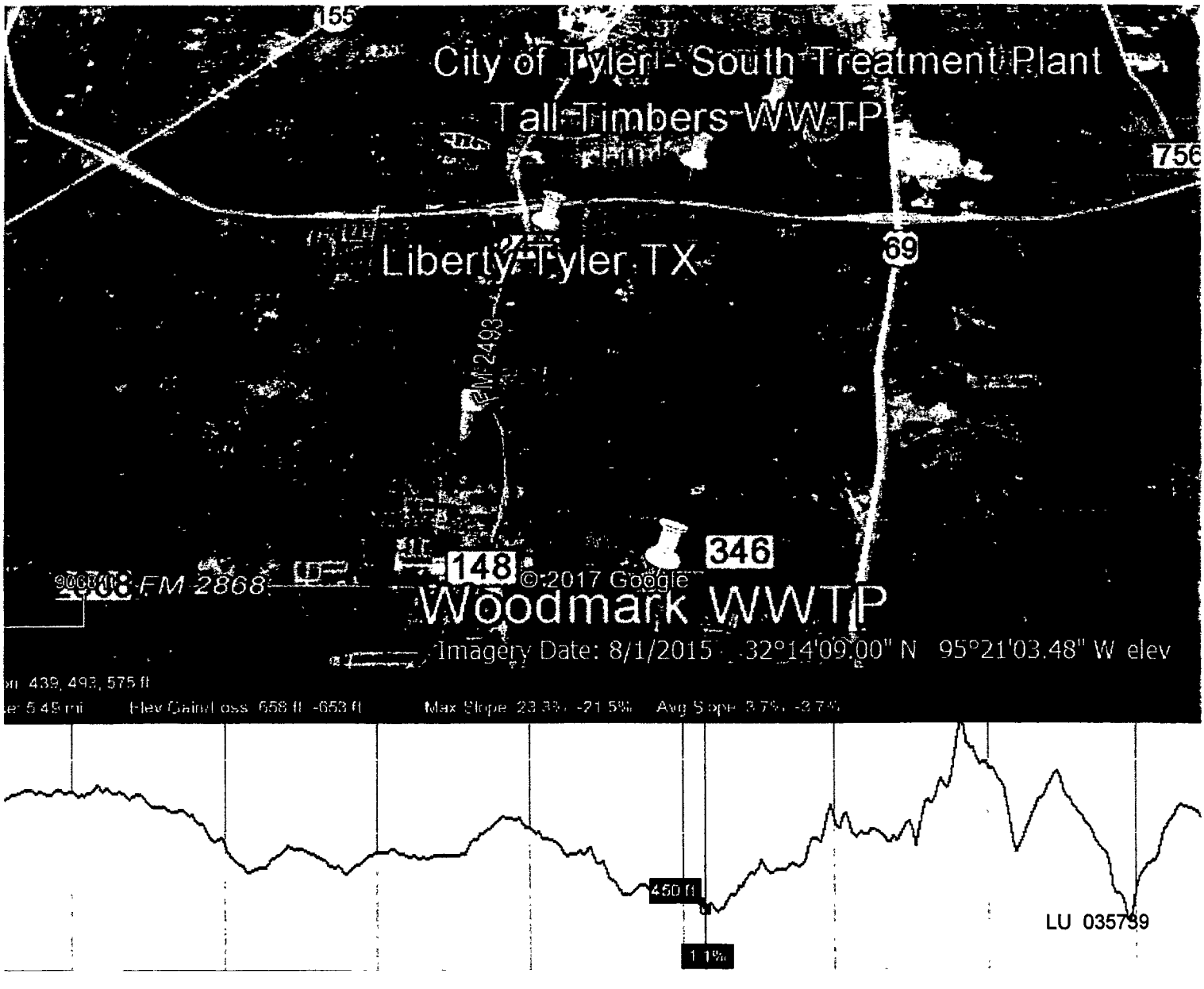
Liberty Utilities

Woodmark Lift Station and Force Main

Proposed Force Main Alignment

Woodmark to Tall Timbers

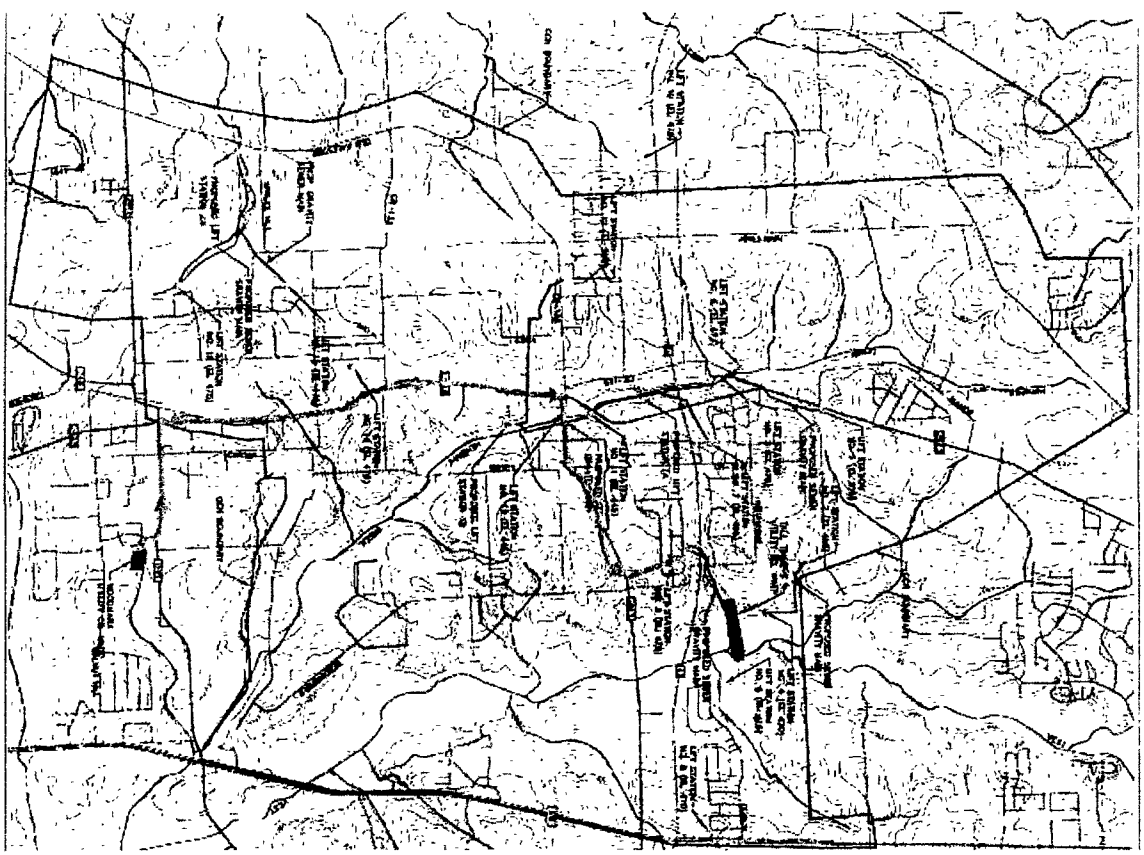
July 17, 2017



Liberty Utilities

Woodmark Lift Station & Force Main

July 17, 2017



| Woodmark Onsite Lift Station No 1 | | | | | | |
|---|---|---|---|---|---|---|
| **Wetwell Calculations** | | | | | | |
| | | | | | | |
| Project No. 7195.01 | | | Dated | 27-Jun-17 | | |
| | | | | | | |
| 10" Inlet Sewer Invert | | 454.00 | | | | |
| Lift Station Surface Elev. | | 456.69 | | | | |
| High Level Alarm | | 453.00 | | | | |
| Pump 2 on Elevation | | 452.50 | | | | |
| Pump 1 On Elevation | | 451.75 | | | | |
| Pump Off Elevation | | 449.50 | **2.25** | **working volume, [ft]** | | |
| Station invert | | 436.69 | | | | |
| | | | | | | |
| **Circular WET WELL** | | | | using a circular wet well | | |
| Design Report Dimensions | | | Provided | | | |
| Diameter | Area | Height | Volume | | | |
| [ft] | [ft$^2$] | [ft] | [gal] | | | |
| 12 | 113.1 | 2.25 | 1,903.4 | design used | | |

: Pump Flows Greater than 200 12-ft Diameter -Triplex Configuration

| | | | | | | Q = 4*Vol. [gal] / Cycle Time [min] | | | | | Cycle time |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | vol =(Q*Cycle Time)/4 | | | | Starts/hr | [min] |
| | | Peak (Q) | Peak(Q) | | | | | | | | |
| | | Flow | Flow | | | | | | | | |
| Description | | [gpd] | [gpm] | | | | | | | | |
| Pump Demands | | 504,000 | 350 | | | Vol = | 2800 | [gallons] | | 6.0 | 10.0 |
| Pool Demands | | 100,800 | 70 | | | Vol = | 2100 | [gallons] | | 7.5 | 8.0 |
| Peak demand (With the pool demands) | | 1,612,800 | 1,120.00 | | Select | Vol = | 1960 | [gallons] | | 8.6 | 7 |
| Peak demand (Without the pool demands) | | 1,512,000 | 1,050 | | | Vol = | 3675 | [gallons] | | 4.3 | 14 |
| | | | | | | Select Triplex Configuration | | | | 350.0 gpm pumps | |

| EMERGENCY STORAGE CALCULATIONS | | |
|---|---|---|
| | | |
| Average Daily Flows (gpm) | | 350.00 |
| Volume of avg daily flows in 8 hrs (gal) | | **168,000.00** |
| Volume of peak daily flows in 4 hrs (gal) | | **268,800.00** |
| Elevation of the lowest manhole (ft) | | 453.75 |
| Elev diff between the HLA & Surface Elev (ft) | | 0.75 |
| Volume of emergency storage available in the wet well (gal) | | 634.48 |
| Vol of emergency storage available in the MH and pipes (gal) | | 11,454.73 |
| Total Volume of emergency storage available (gal) | | **12,089.2** |
| Total Time of emergency storage available (Min) | | **30.2** |

| | Equipment | | Equiv HP | |
|---|---|---|---|---|
| | Pumps | | 150 | |
| | Odor Control | | 50 | |
| | Ancillary | | 15 | |
| | Total HP | | 215 | |
| | Total KW | | 160.3255 | |
| | Service Factor | | 1.15 | |
| | Standby Gen | | 184.37433 | |
| | KW EQ SB Gen | | 200 | KW |
| | KWH/day | | 4800 | KWH/day |
| | Flow | | 0.5 | MGD |
| | MgOH | | 50 | Gal/day |
| Chemical | $/day | $ 150.00 | | |
| Power | $/day | $ 546.67 | | |
| **Total** | **$/Day** | **$ 696.67** | DNI Labor, Regulatory, Solids Handling | |
| | **$/Month** | **$ 20,900.00** | DNI Labor, Regulatory, Solids Handling | |
| | **$/Yr** | **$ 254,283.33** | DNI Labor, Regulatory, Solids Handling | |

# Woodmark Onsite Lift Station No 1

## System Curve Data

Project No. 7195.01 Dated 27-Jun-17

**System Curves**

| Flow [gpm] | Pump Head [ft] | System OFF [ft] | System On [ft] |
|---|---|---|---|
| 350 | 115.4 | 188.7 | 190.9 |
| 400 | 126.7 | 200.0 | 202.2 |
| 500 | 152.9 | 226.2 | 228.4 |
| 700 | 219.9 | 293.2 | 295.4 |
| 1050 | 381.7 | 455.0 | 457.2 |

# Woodmark Onsite Lift Station No 1
## Determination of Total Dynamic Head

Project No. 7195.01 **Dated** **27-Jun-17**

| | | |
|---|---|---|
| **Lift Station - Surface Elevation** | **456.69** | |
| **Lift Station - Invert (bottom) Elevation** | **436.69** | |
| **Lift Station Depth** | **20.00** | **ft** |
| **Inlet sewer invert** | **454.00** | |
| **High Level Alarm** | **453.00** | |
| **Lift Station - Pumping Elevation (Pump 2 on)** | **452.50** | |
| **Lift Station - Pumping Elevation (Pump 1 on)** | **451.75** | |
| **Pumping Volume** | **2.25** | **ft** |
| **Lift Station - Pumping Elevation (pump off)** | **449.50** | |
| **Lift Station - Low Level Alarm** | **449.00** | **2.5 above wet well bottom elev. is acceptable per Ed Martin** |

**D=** **10** Inch
**Max Q =** **700** **GPM**
**Max V=** **1.56** **CFS**

**Lift Station Piping Above Ground** **525.0 high point in line**

| Description | Flow max Q GPM | Flow max Q CFS | Diameter (in.) | Diameter (ft) | Number Fittings or Length Pipe | K or C | Velocity (ft/s) | V2/2g (ft.) | Headloss (ft.) |
|---|---|---|---|---|---|---|---|---|---|
| | | | 10 | | | | | | |
| | | | 10 | | | | | | |
| 90 Deg. Bend | 700 | 1.56 | 10 | 0.83 | 6 | 0.450 | 2.854 | 0.126 | 0.341 |
| Plug Valves | 700 | 1.56 | 10 | 0.83 | 3 | 0.300 | 2.854 | 0.126 | 0.114 |
| Standard Tee thru flow | 700 | 1.56 | 10 | 0.83 | 1 | 0.300 | 2.854 | 0.126 | 0.038 |
| Wye | 700 | 1.56 | 10 | 0.83 | 2 | 0.700 | 2.854 | 0.126 | 0.177 |
| Reducer | 700 | 1.56 | 10 | 0.83 | 1 | 0.040 | 2.854 | 0.126 | 0.005 |
| 45 Deg. Bend | 700 | 1.56 | 10 | 0.83 | 15 | 0.250 | 2.854 | 0.126 | 0.474 |
| Swing check valve | 700 | 1.56 | 10 | 0.83 | 3 | 0.450 | 2.854 | 0.126 | 0.171 |
| Flow meter | 700 | 1.56 | 10 | 0.83 | 1 | 0.001 | 2.854 | 0.126 | 0.000 |
| | | | | | | | | | **1.320** |
| Pipe from wetwell to surface. | 700 | 1.56 | 10 | 0.83 | 20.0 | 120 | 2.854 | 0.126 | 0.074 |
| Valve Piping | 700 | 1.56 | 10 | 0.83 | 26 | 100 | 2.854 | 0.126 | 0.135 |
| 10" Force Main | 700 | 1.56 | 10 | 0.83 | 27,000 | 100 | 2.854 | 0.126 | 140.225 |
| | | | 10 | | | | | | |
| | | | 10 | | | | | | |
| **Total Frictional Loss from Woodmark WWTP to Tall Timbes .** | | | | | 27,046 | | | | **143.075** |

| Description | | Headloss (ft) |
|---|---|---|
| Loss in fittings | | 1.32 |
| Loss in pipe | | 143.07 |
| Static Elevation difference | | 75.50 |
| **Total head loss** | | **219.9** |

Headloss 140-ft max to aleveate special order pumps

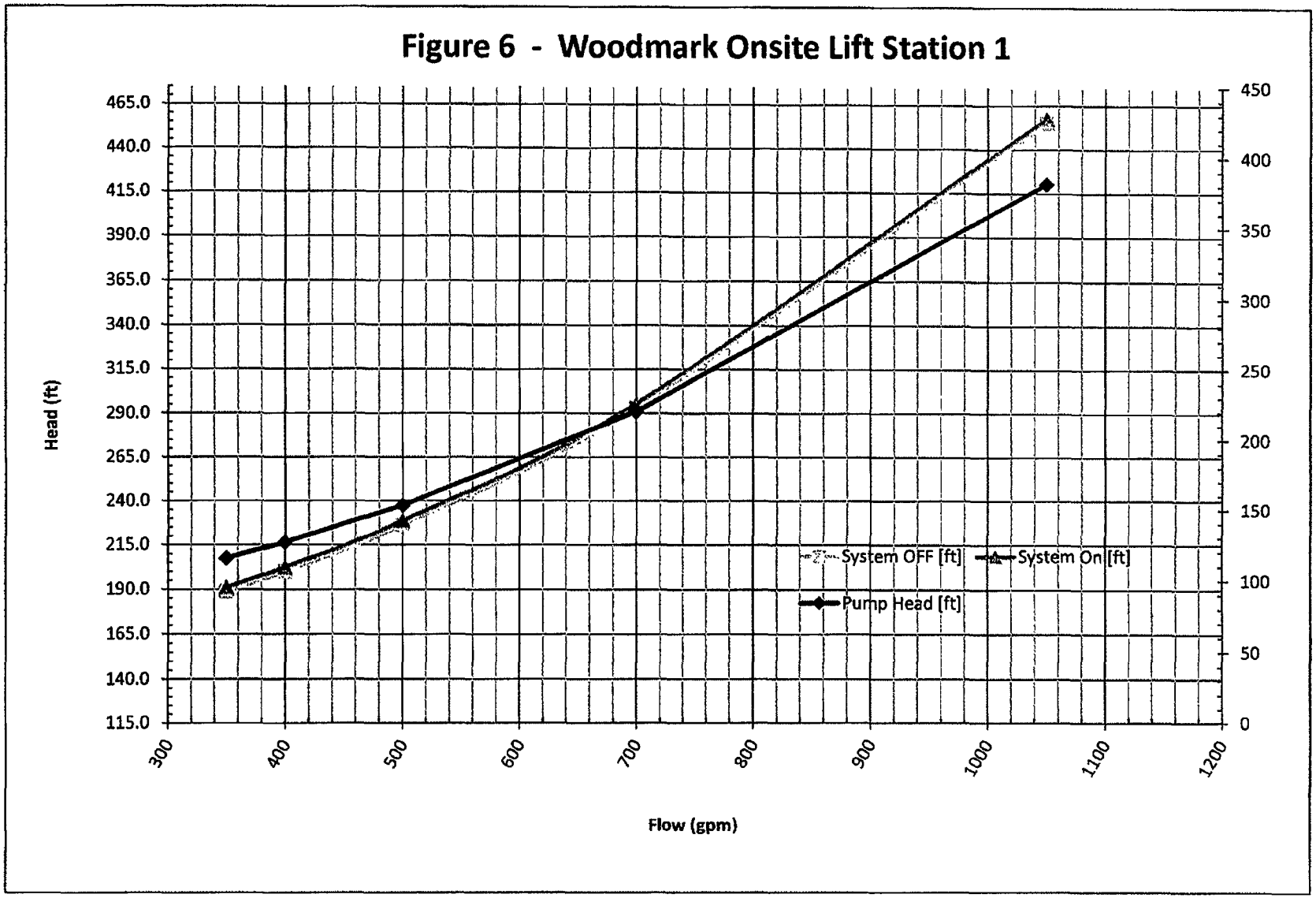
# Woodmark Onsite Lift Station No 1
## Wetwell Calculations

Project No. 7195.01 Dated 27-Jun-17

| Static **System OFF** (ft) | Static **System ON** (ft) |
|---|---|
| **73.25** | **75.50** |
| **73.25** | **75.50** |
| **73.25** | **75.50** |
| **73.25** | **75.50** |
| **73.25** | **75.50** |
| **73.25** | **75.50** |
| **73.25** | **75.50** |
| **73.25** | **75.50** |
| On Elevation | **451.8** |
| Off Elevation | **449.5** |
| Discharge Elevation | **525** |
| Total Elevation (ft) | **75.5** |

**Actual highest elevation of the force mair**

## Figure 6 - Woodmark Onsite Lift Station 1



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## Sewer Force Main Calculations

Project No. 7195.01 Dated 13-Mar-08

**Force Main Velocity Calculations**

| Pipe Size [in] | Area [ft²] | Flow [gpm] | Flow [cfs] | Velocity [ft/s] | Flow MGD | Flow gpm | Comments |
|---|---|---|---|---|---|---|---|
| 3 | 0.049 | 85 | 0.19 | 3.86 | 0.12 | 85 | |
| 3 | 0.049 | 120 | 0.27 | 5.45 | 0.17 | 120 | |
| 3 | 0.049 | 170 | 0.38 | 7.72 | 0.24 | 120 | |
| 4 | 0.087 | 118 | 0.26 | 3.01 | 0.17 | 118 | |
| 4 | 0.087 | 85 | 0.19 | 2.17 | 0.12 | 85 | |
| 4 | 0.087 | 280 | 0.62 | 7.15 | 0.40 | 280 | |
| 6 | 0.196 | 560 | 1.25 | 6.35 | 0.81 | 560 | |
| 6 | 0.196 | 440 | 0.98 | 4.99 | 0.63 | 440 | |
| 8 | 0.349 | 499 | 1.11 | 3.19 | 0.72 | 120 | |
| 8 | 0.349 | 558 | 1.24 | 3.56 | 0.80 | 120 | |
| 10 | 0.545 | 300 | 0.67 | 1.23 | 0.43 | 300 | |
| 10 | 0.545 | 400 | 0.89 | 1.63 | 0.58 | 400 | |
| 10 | 0.545 | 700 | 1.56 | 2.86 | 1.01 | 700 | selected |
| 10 | 0.545 | 1050 | 2.34 | 4.29 | 1.51 | 1050 | |
| 10 | 0.545 | 1200 | 2.67 | 4.90 | 1.73 | 1200 | |
| 12 | 0.785 | 1050 | 2.34 | 2.98 | 1.51 | 1050 | |
| 12 | 0.785 | 1050 | 2.34 | 2.98 | 1.51 | 1050 | |
| 14 | 1.069 | 700 | 1.56 | 1.46 | 1.01 | 700 | |
| 14 | 1.069 | 1050 | 2.34 | 2.19 | 1.51 | 1050 | |

Notes:

Q=V*A V=Q/A Increased flow to obtain required velocity in pipeline

Q= Flow [cfs]
V= Velocity [ft/s]
A = Area [ft2] = (PI*D²)/4

# Woodmark Onsite Lift Station No 1
## Pump Horse Power Calculation per AR18-9

Project No. 7195.01 Dated 13-Mar-08

| Pump HorsePower Verification | | | |
|---|---|---|---|
| Requirement AAC AR18-9-E301 5.e | | | |
| Pump water brake horsepower shall be at least 0.00025 times the product of Head (TDH) times Flow | | | |
| Flow [gpm] | 1050 | | 350 |
| Head [ft] | 457.2 | | 190.9 |
| TDH * Flow = Product | 480060 | product | 66815 |
| Product x 0.00025 | 120.02 | BHP | 16.70 |
| Service Factor | 1.15 | | 1.15 |
| Pump Hp | 138.0 | **o.k.** | 19.2 |
| | 150 | HP | 25 |

Divide by # of Pumps 50 ***Select 3 - 40 Hp pumps***

**Note:**

Pump water brake horsepower shall be at least 0.00025 times the product of Head (TDH) times Flow

# Woodmark Onsite Lift Station No 1
## Odor Control Calculations

**Project No. 7195.01** Dated 13-Mar-08

Station Surface Elevation 456.69
Station Invert 436.69

Circular WET WELL

| Diameter [ft] | Area [ft$^2$] | Height [ft] | Volume [ft$^3$] | Volume [gal] |
|---|---|---|---|---|
| | | | | |
| 12 | 113.1 | 20 | 2,261.9 | 16,919.4 |
| | | | | |
| | | | | |

Requuires 2300 SCFM Scrubber
50HP Scrubber

## Storm Water Retention Calculations

Dimensions of Site = 88 Length
75 Width

**Area of Site =** 6600 [ft$^2$]
0.15 [ac]

### Retention Volume Required

$V_{Req} = C*(P/12)*A$

where:

| | |
|---|---|
| A = Area, [ac] | 0.15 |
| C = Coefficient | 0.5 |
| P = Rainfall, [in.] | 4 |

$V_{Req}$ = 0.0253 [ac-ft]
1100.0 [ft$^3$]

### Retention Volume Provided

$V_P = [(A_B+A_T) / 2] * d$

where:

$V_P$ = Volume Provided [ft$^3$]
$A_B$ = Bottom Area of Basin, [ft$^2$]
$A_T$ = Top Area of Basin, [ft$^2$]
d = Depth, [ft]
Side slopes = 3:1

| Length [ft] | Width [ft] | Area [ft$^2$] | Depth [ft] |
|---|---|---|---|
| | | | |
| 25 | 5 | 125 | |
| 40 | 20 | 800 | |
| | | | 2.50 |
| | 3 to 1 | | |

$V_P$ = 1156.3 [ft$^3$]

# WoodmarkWWTP'Force Main Calcs'!A1
## Net Positive Suction Head Calculations

Project No. 7195.01 Dated 29-Jun-17

| Description | Initial | |
|---|---|---|
| Flow Conditions [gpm] | 700 | |
| Wet Well Bottom Elevation [ft] | 436.69 | |
| Pump setting | 436.69 | |
| Pump Off elevation | 449.5 | |
| | | |
| $H_{absolute}$ | 32 | |
| $H_s$ | 12.81 | |
| $H_f$ | 0.10 | entrance loss pump suction (k=0.5) |
| $H_{vp\ @\ 90\ degress}$ | 1.6 | |
| $NPSH_{available}$ | 43.28 | |

**NPSHa** = Habs + Hs - Hf - Hvp
where:

**NPSHa** = Net positive suction head available, [ft].
**Habs** = absolute pressure on surface of liquid in suction well, [ft] (See Table 1 of "Pump Selection - A Consulting Engineer's Manual").
**Hs** = Static elevation of liquid above centerline of pump (to entrance eye of the first stage impeller), [ft].
**Hf** = friction head and entrance losses in suction piping, [ft].
For submersible pumps- entrance loss is inlet of pump only (k = 0.5)
**Hvp** = absolute vapor pressure of fluid at pumping temperature, [ft] (See Table 2 of "Pump Selection - A Consulting Engineer's Manual").
HGL=hydraulic grade line

**Compatibility Report for WM to TT LS calcs.xls**
**Run on 6/29/2017 16:10**

The following features in this workbook are not supported by earlier versions of Excel. These features may be lost or degraded when opening this workbook in an earlier version of Excel or if you save this workbook in an earlier file format.

| Minor loss of fidelity | # of occurrences | Version |
|---|---|---|
| Some cells or styles in this workbook contain formatting that is not supported by the selected file format. These formats will be converted to the closest format available. | 1 | Excel 97-2003 |

LU 035753




| | | | | |
|---|---|---|---|---|
| E2 | TTUC COLLECTION SYSTEM FLOW DIAGRAM | ALGONQUIN WATER RESOURCES OF TEXAS<br>TALL TIMBERS UTILITY CO., INC.<br>COLLECTION SYSTEM MASTER PLAN | DESIGNED BY CDH CHECKED BY GLB<br>DRAWN BY CDH REVIEWED BY GLB<br>NO. DATE REVISION | GARY BURTON ENGINEERING, INC.<br>CONSULTING - PLANNING - PERMITTING - DESIGN - MANAGEMENT<br>14531 HWY. 155 S. TYLER, TEXAS 75703<br>PHONE (903) 561-6984 FAX (903) 561-8757 |

# Woodmark
## Lift Station Construction Cost Detail
## Jun-17

| Line Item Description | | Scheduled Values | Quantitiv | Total | Comment | |
|---|---|---|---|---|---|---|
| Pipe including Fittings - Dig Lay Backfill | 1 LF | $50.00 | 26000 | $1,300,000.00 | 26,000 LF | |
| Safety Shoring | 1 LF | $2.00 | 26000 | $54,000.00 | 26,000LF | |
| Jack & Bore 24" Casing | 1 LF | $603.00 | 180 | $108,540.00 | Highway Crossing | |
| Pipeline / MH Hydro Testing | 1 LF | $8.50 | 26000 | $221,000.00 | AWWA Standards | |
| 60" Manhole | 1 LF | $7,878.16 | 5 | $39,390.80 | | |
| TV Inspection / Mandral | 1 LS | $25,000.00 | 1 | $25,000.00 | | |
| 10" Flow Meter | 1LS | $10,000.00 | 1 | $10,000.00 | Includes installation,startup and testing | |
| Bypass Pumping | 1 LS | $50,000.00 | 1 | $50,000.00 | Includes Pumping equipemin and 24/7 | |
| Lift Station General Conditions | 1 LS | $40,000.00 | 1 | $40,001.00 | 8600 sf site | |
| Mobilization/DeMob | 1 LS | $20,000.00 | 1 | $20,001.00 | | |
| Dig | 1 LS | $17,500.00 | 1 | $17,501.00 | 20' deep, approx 700 cf w/disposal | |
| Structure | 1 LS | $127,000.00 | 1 | $127,001.00 | Manhole and deck | |
| Electrical Building | 1LS | $72,000.00 | 1 | $72,001.00 | Assume 12' x 20'w/ AC | |
| Wall Sleeves and Link Seal | 1 LS | $15,000.00 | 1 | $15,001.00 | | |
| Hatches and Guide Rails | 1 LS | $28,500.00 | 1 | $28,501.00 | SS rails 3 x 20' installed | Chang Changed Safety Nets Grati |
| Corrosion Coatings | 1 LS | $62,172.00 | 1 | $62,173.00 | 12' dia x 20' @ $25 sf | |
| Wet Test Pump Station Stucture and Piping | 1 LS | $3,500.00 | 1 | $3,501.00 | | |
| Backfill | 1 LS | $9,000.00 | 1 | $9,001.00 | | |
| Abandon 6" Forcemain | 1 LF | $8.50 | 15000 | $127,500.00 | 15,000 LF | |
| Electrical & Site Service | 1 LS | $92,400.00 | 1.00 | $92,401.00 | All inclusive per NEC Specification | |
| 50 HP Packaged VFDs for Pumps | 3Ea | $18,400.00 | 3 | $18,403.00 | Type 12 - Requires Building | |
| SCADA | 1 Ea | $1,200.00 | 1 | $1,200.00 | Installation setup and training | |
| Concrete for Electric | 1 LS | $4,500.00 | 1 | $4,501.00 | | |
| Fence | 1 LS | $50,500.00 | 1 | $50,501.00 | Changed chain link to block wall | |
| Sound & Sunshade | 1 LS | $8,500.00 | 1 | $8,501.00 | As Required by Ordinance | |
| Site Grading | 1 LS | $19,900.00 | 1 | $19,901.00 | | |
| ABC | 1 LS | $14,850.00 | 1 | $14,851.00 | | |
| DG | 1 LS | $9,900.00 | 1 | $9,901.00 | | |
| Stainless Brackets and pumping ancillary hardware | 1 LS | $10,500.00 | 1 | $10,501.00 | | |
| Pipe Supports | 1 LS | $7,500.00 | 1 | $7,501.00 | | |
| Install Pumps | 1 LS | $89,313.00 | 1 | $89,314.00 | Pump sensors and cables upgraded | |
| Air Vac Stations | 1 LS | $3,200.00 | 1 | $3,200.00 | ARI - Air Release Stations | |
| Coating/Painting | 1 LS | $8,500.00 | 1 | $8,501.00 | | |
| Odor Control / Chemical Feed | 1 LS | $78,000.00 | 1 | $78,001.00 | | |
| Commercial Access Gate | 1 LS | $14,500.00 | 1 | $14,501.00 | Commercial Reinforced Wheel Gate | |
| Access Entry Hardware System * Security | 1 LS | $17,650.00 | 1 | $17,651.00 | Key less Access and Security Cameras | |
| Bollards | 1 LS | $5,600.00 | 1 | $5,601.00 | | |
| Stand-By Power Gen Set | 1 LS | $50,000.00 | 1 | $50,001.00 | 200 KVA | |
| Equipment Training and O & M Manuals | 1 LS | $15,000.00 | | $15,000.00 | | |
| Subtotal | | $914,493.50 | | | | |
| Engineering Design, Permits and Const. Management @ 25% | 1 LS | $219,478.44 | | $219,478.44 | | |
| Legal Easements and Contingencies @10% | 1 LS | $228,623.38 | | $228,623.38 | | |
| | Total | $2,277,088.82 | | $3,298,046.62 | | |
| | | Peak Hour Flow Capacity | Capacity (MGD) | 1.5 | 0.5 ADF / 1050 gpm PDF | |
| | | | $/gal | $ 2.20 | | |

LU 035754

Liberty Utilities

January 11, 2017

Mr. Jerry Fackrell, Jr.
President
New Subdivisions RTC, LLC
17521 HWY 69 S. Building II
Tyler, TX 75703

Sent via email: jfack@bengalventures.com

**Re: Contribution in Aid of Construction (CIAC) costs for Rockpoint Unit 3**

Dear Mr. Fackrell;

I am in receipt of your December 7, 2016 letter concerning my November 11, 2016 email to you regarding capacity costs for Rockpoint Unit 3. After further review of these issues, I wanted to correct a couple of issues relating to the costs of sewer service to your property by Liberty Utilities (Tall Timbers Sewer) Corp. Liberty Tall Timbers is not charging a set or predetermined capacity fee for sewer services to Rockpoint Unit 3. Rather, we are charging Contributions in Aid of Construction (CIAC) in accordance with applicable tariffs and regulations. The CIAC costs are based on facilities and costs necessary to provide service to Rockpoint Unit 3 relating to future expansion of the Liberty Tall Timbers wastewater treatment plant (WWTP). By charging CIAC for new developments, Liberty Tall Timbers is able to minimize any potential rate increases in future rate cases associated with new plant and facilities.

Towards that end, our engineering department calculated the CIAC charges for service to your development based on projected buildout and flows from your project. That CIAC calculation for Rockpoint Unit 3 is attached to this letter. As set forth in the CIAC calculation, the CIAC charges for your development total $176,578.15.

In accordance with Liberty Tall Timbers' current tariff, "[d]evelopers will be required to provide contributions in aid of construction in amounts sufficient to furnish the development with all facilities necessary to provide for reasonable local demand requirements and to comply with Texas Commission On Environmental Quality's minimum design criteria for facilities used in collecting, treating, transmitting and discharging of wastewater effluent." Under Texas Public Utility Commission (PUC) rule 16 TAC 24.86(c)(2)(B), "[d]evelopers may be required to provide contributions in aid of construction to reimburse the utility for...additional facilities compliant with the commission's minimum design criteria for wastewater collection and treatment facilities and to provide for reasonable local demand requirements." That Texas PUC rule further provides

that "[i]ncome tax liabilities which may be incurred due to collections of contributions in aid of construction may be included in extension charges to developers." The CIAC charges here don't include income taxes, but that issue will be addressed in the future Line Extension Agreement to be entered into between the parties for the Rockpoint Unit 3 development.

We look forward to working with you. Please call if you have any questions.

Sincerely

Steve Carlson

Steve Carlson
Manager Development Services

# Contribution in Aid of Construction ("CIAC") - Rockpoint Unit 3

**January 11, 2017**

| | |
|---|---|
| Development: | Rockpoint Unit 3 |
| Estimated number of lots | 59 |
| Developer: | New Subdivisions RTC, LLC |
| Wastewater Provider: | Liberty Utilities (Tall Timbers Sewer) Corp |
| CIAC Purpose | Developer contributions for offsite WWTP expansion and facilites necessary to meet reasonable demand requirements and to comply with TCEQ minimum design criteria for facilities used in collecting, treating, transmitting and discharging wastewater effluent |

Note: Developer shall install, construct and convey to Liberty Tall Timbers, at Developer's cost and expense, any and all onsite and offsite improvements necessary to connect the Rockpoint Unit 3 development to the Liberty Tall Timbers wastewater system, including collection lines, lift stations and other similar facilities.

The CIAC charges here relate to future expansion of the Liberty Tall Timbers WWTP and associated offsite facilities costs resulting from the Rockpoint Unit 3 development, and the costs are based on recent construction costs in Texas experienced by Liberty Utilities The costs shown are based on expanding the Liberty Tall Timbers WWTP to 750,000 gpd

Liberty Tall Timbers WWTP Existing Treatment Capacity 450,000 gpd with current discharge to stream

| | | | | |
|---|---|---|---|---|
| **CIAC Calculation** | | 85 | gallons per capita per day (gpcd) | TCEQ Rules, Chapter 217, Figure: 30 TAC § 217.32(a)(3), Table B 1 |
| | | 3 | persons per service (pps)/EDU | |
| | | 1.8 | Peaking Factor-Max Day (PF) | |
| | | 3 | Peak Hour Factor | |
| | (a) | 255 | Gallons per day per EDU (single family residential) | |
| | (b) | 300,000 | GPD (Capacity Increase) | |
| | (c) | 1,176 | No. of EDUs (single family residential) served by expansion =(b) / (a) | |

| | | | |
|---|---|---|---|
| **Cost Items** | $21,000 | Permitting | |
| | $3,300,000 | Liberty Tall Timbers WWTP Plant Expansion Costs (est) | |
| | $0 | Facility Upgrades (Electrical Service, Generator) | not incl'd |
| | $0 | Site Work (fencing, yard piping) | incl"d |
| | $200,000 | Engineering (geotech, survey, structural, electrical, const admin) | |

| | | | |
|---|---|---|---|
| **WWTP Expansion Cost** | (d) | **$3,521,000** | subject to change periodically updated |
| **CIAC Fee Calculation per EDU (d/c):** | | **$2,992.85** | subject to change periodically updated |
| **Number of estimated lots in Rockpoint Unit 3** | | **59** | estimated number of lots, may change |
| **Estimated Rockpoint Unit 3 CIAC:** | | **$176,578.15** | subject to change |

**Note: This CIAC calculation charge is subject to change if Developer changes the number of units, type of units (commercial v. residential) and increases/decreases demand requirements for the development.**

**This CIAC calculation is valid for 6 months from the date noted above and will be subject to recaclulation if the CIAC charges are not paid within that time period.**