Advanced Metering Infrastructure (AMI) Upgrade Project

710 E. San Augustine
Deer Park, TX 77536

Conducted by:

Performance Services

801 E. Old Settlers Blvd
Suite 100
Round Rock, Texas 78664
February 27, 2024

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EXHIBIT A - INVESTMENT GRADE AUDIT

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I. EXECUTIVE SUMMARY

A. BACKGROUND

Performance Services (PSI) was selected by the City of Deer Park on August 15, 2023 to begin developing an Investment Grade Audit (IGA) for an Energy Savings Performance Contract. The focus of the IGA was on the water meter infrastructure.

City of Deer Park objectives for this project are as follows:

- Improvements in water losses by capturing unaccounted for water usage
- Increased water/sewer revenues through improved water meter accuracy and AMI (Advanced Metering Infrastructure)

This report documents PSI's findings and recommendations. The data presented herein includes engineering and financial analyses, and savings calculation methodology associated with the improvements and conservation measures recommended by PSI. The conservation measures recommended herein will result in reductions in operational expenditures and increase water/sewer revenues.

The following is a summary of the conservation measure types included in this project:

- Water meters w/ AMI

Project Benefits:

1. Reductions in unnaccounted for water losses
2. Increased water/sewer revenue while minimizing O&M costs
3. Guaranteed water meter accuracy and performance

This report documents PSI's findings and recommendations. The data presented herein includes engineering and financial analyses, and savings calculation methodology associated with the water meters and AMI that are recommended by PSI.

B. SYSTEMS ANALYZED

The Request for Proposal (RFP) published by the city contained a meter quantity and size chart shown below.

Table 1A: RFP Listed Water Meter Sizes and Quantities

Meter Size	Quantity
5/8"x3/4"	7,394
1"	2,835
1.5"	97
2"	409
3"	17
4"	11
6"	6
8"	3
Total	**10,772**

However, at the request of the city, PSI conducted a thorough city-wide audit of the water meters and updated the quantities of each of the meter sizes. The updated meter quantity and size chart is shown below.

Table 2A: Audited Water Meter Sizes and Quantities

Meter Size	Quantity
5/8"x3/4"	9,074
1"	2,748
1.5"	145
2"	253
3"	21
4"	13
6"	5
8"	2
10"	1
Total	**12,262**

C. COMPOSITE PROJECT SUMMARY

Table 3A: List of Recommended Utility Cost Reduction Measures

Utility Cost Reduction Measures	
Location	Water Meters w/ AMI
Residential Customers	◆
Commercial Customers	◆

Table 4A: Summary of Project: Financial and Savings

Summary of Project (20 Years)	
Increased Billable Flow (kGal)	1,832,027
Increased Water/Sewer Revenue	$20,911,484
Project Cost	$9,671,894
Net Impact	$10,081,477

This Investment Grade Audit focused on a single Utility Cost Reduction Measure (UCRM). This UCRM was combining water meter replacements and implementation of AMI for both the residential and commercial/industrial customers. This UCRM has been evaluated and recommended by PSI. If implemented by PSI, this UCRM will incur costs and deliver savings as summarized above. All engineering, equipment, material, project management, and commissioning costs are included. PSI provides professionally managed, turnkey projects for customers and proposes this project as a single turnkey transaction. Although several subcontractors and vendors are involved, all will be managed by PSI.

D. SUMMARY OF PROJECT TOTALS

Table 5A: Overall Project Financial Table

Deer Park, Texas		ANNUAL SAVINGS			Project Cost ($)	Payback (yrs.)	Estimated Project Lifetime (yrs.)
UCRM No.	UCRM Title	Water/Sewer (kgal/yr)	Water/Sewer ($/yr)	O&M Savings			
1	Water Meters w/ AMI	91,601	$1,035,222	$0	$9,671,894	9.3	20
Totals		**91,601**	**$1,035,222**	**$0**	**$9,671,894**	**9.3**	

II. GENERAL SYSTEM DESCRIPTIONS

A. SYSTEM DESCRIPTION

Water Meters

The City of Deer Park provides water and sewer services to residents and commercial businesses. Please refer to Section IV – Utility Rate Schedule Analysis for detailed explanation and discussion of PSI's approach for addressing water/sewer billing rates.

The PSI audit team arranged for independent 3rd party on-site testing of the accuracy of the water meters. The meter testing sample size was sufficient for a statistically valid representation of the water meter accuracies.

B. UTILITY COST REDUCTION MEASURES (UCRMs)

Table 6A: UCRM Matrix

Utility Cost Reduction Measures	
Location	Water Meters w/ AMI
Residential Customers	◆
Commercial Customers	◆

C. UTILITY ANALYSIS METHODOLOGY

Performance Services has developed water baselines from utility data provided by the City of Deer Park.

Water savings/revenue increases were determined using standard engineering calculation spreadsheets.

Savings calculations within the Appendix include the following:

- AMI and water meter upgrades

III. BASE YEAR WATER SUPPLIED VERSUS BILLED

Table 7A: WATER SUPPLIED/BILLED BASELINE

Baseline Water (2023)	
Water Supplied (gal)	1,385,994,000
Water Billed (gal)	1,078,528,000
Non Revenue Water (gal)	307,466,000

IV. UTILITY RATE SCHEDULE ANALYSES

A. WATER AND SEWER RATE ANALYSIS

The City of Deer Park has the following fixed and variable water and sewer rates. All variable rates are determined in $/kGal. The 2023-2024 rates will be used to calculate the increased revenue projections.

Table 8A: Water Rates

2022-2023 Water			
Category	Base Rate	0 - 2,000	2,000 +
Residential	$15.88	Included	$6.14
Commercial	$15.88	Included	$6.14

2023-2024 Water			
Category	Base Rate	0 - 2,000	2,000 +
Residential	$16.67	Included	$6.45
Commercial	$16.67	Included	$6.45

Table 9A: Sewer Rates

2022-2023 Sewer			
Category	Base Rate	0 - 2,000	2,000 +
Residential	$15.88	Included	$6.62
Commercial	$15.88	Included	$6.62

2023-2024 Sewer			
Category	Base Rate	0 - 2,000	2,000 +
Residential	$16.67	Included	$6.95
Commercial	$16.67	Included	$6.95

In an effort for the revenue increase analysis to be conservative PSI evaluated the water and sewer revenues in the 2022/2023 city budget and calculated the effective rate to be used. The effective variable rate calculation is represented in the table below. The effective rate % of the ordinance rate is used to calculate the increased revenue projections.

Table 10A: Effective Water / Sewer Rate Calculations

	A	B	C	D	E	F	G
Revenues	2022/2023	Base Charges	Variable Charges	Total Gallons Sold	Variable Gallons	kGal	Effective Rate
Water Usage	$7,342,297	$2,336,647	$5,005,650	1,078,528,000	821,362,337	821,362	$6.09
Sewer Usage	$6,729,909	$2,079,616	$4,650,293	949,104,640	731,012,480	731,012	$6.36

Notes	
A	Water and Sewer Revenues shown in the 2022/2023 Budget as estimated
B	Base Charge Portion of Sales, Ordinance 4359 Rates, 11% of Customers are Water Only, 12,262 Water Accounts
C	Total Sales - Base Charges
D	Total Gallons Sold, Data Provided by City
E	Variable Gallons subject to Variable Rate, Assuming 10% of Customers use less than 2,000 gallons/month
F	kGal = 1,000 Gallons
G	Variable Charges divided by kGal

V. TECHNICAL ANALYSIS

A. UTILITY COST REDUCTION MEASURES

Table 11A identifies Utility Cost Reduction Measures (UCRM) that can be economically implemented as part of this guaranteed savings project for City of Deer Park. This UCRM provides an increase in water and sewer revenue and a reduction in operating costs.

Table 11A: Utility Cost Reduction Measures

Measure Type	Utility Cost Reduction Measure
Water	Water Meters w/AMI

Project scope of work specifics follow:

UCRM-1: Water Meters w/AMI

Water Meters

PSI recommends replacement of the existing residential and commercial water meters with Neptune Mach 10 R900i water meters. Benefits include:

- Accurate flow measurements at extended-low, low, medium and high flows
- No moving parts
- Reduced maintenance
- 20-year accuracy guarantee
- More accurate customer billing
- More accurate and higher billed water/sewer revenues

This measure includes replacing the following quantity and size of water meters:

Table 12A: Water Meter Count

Meter Size	Quantity
5/8"x3/4"	9,074
1"	2,748
1.5"	145
2"	253
3"	21
4"	13
6"	5
8"	2
10"	1
Total	**12,262**

Unit Pricing and extended pricing for the Water Meters is shown in Table 13A.

Table 13A: Water Meter Pricing

Meter Size	Unit Price	Quantity	Extended Price
5/8"x3/4"	$468.17	9,074	$4,248,162
1"	$525.91	2,748	$1,445,199
1.5"	$1,240.65	145	$179,894
2"	$1,318.67	253	$333,625
3"	$4,489.74	21	$94,284
4"	$5,491.62	13	$71,391
6"	$8,253.81	5	$41,269
8"	$12,278.50	2	$24,557
10"	$17,166.18	1	$17,166
	Total	**12,262**	**$6,438,381**

AMI Communication Infrastructure and Equipment

Based on the R900 Tailored Analysis Propagation Study, communication coverage for the city is possible with (4) R900 AMI Gateways. The locations for the Gateways are as follows:

1) Pasadena Water Tower
2) Avon Water Tower
3) Coy Water Tower
4) Fire Station #3

In addition to the R900 AMI Gateways, a portable data collector and Backhaul Communications is recommended.

Unit Pricing and extended pricing for the AMI Communication Infrastructure and Equipment is shown in Table 14A.

Table 14A: AMI Communication Infrastructure and Equipment Pricing

Item	Unit Price	Quantity	Extended Price
Portable Data Collector	$11,766.64	1	$11,766.64
Data Collector Station	$21,879.08	4	$87,516.32
Data Collector Station Set Up	$31,211.24	4	$124,844.96
70' Self Supporting Tower	$100,000.00	0	$0.00
Backhaul Communications	$1,080.00	4	$4,320.00
		Total	**$228,447.92**

Meter Boxes and Lids

Based on the field audit of the water meters, 10.58% of the boxes were visibly damaged and need to be replaced. Due to hidden and unknown conditions PSI recommends a budget for replacing up to 15% of the meter boxes and 100% of the meter box lids. Lid replacement is recommended for the functionality and reception of the meter antenna.

Unit Pricing and extended pricing for the Meter Boxes and Lids is shown in Table 15A.

Table 15A: Meter Boxes and Lids Pricing

Item	Unit Price	Quantity	Extended Price
Meter Boxes	$127.52	1,839	$234,538.83
Meter Lids	$17.00	12,262	$208,478.96
		Total	**$443,017.79**

Curb Stops

The functionality of the curb stops in place is difficult to identify without removal of the meters, however during the meter testing 3.6% of the curb stops showed leaks or failures. PSI recommends a budget allowance for replacing 5% of the curb stops.

Unit Pricing and extended pricing for the Curb Stops are shown in Table 16A.

Table 16A: Curb Stops Pricing

Item	Unit Price	Quantity	Extended Price
Curb Stops	$245.00	613	$150,209.50

Line Type Audit

PSI recommends that during the meter change out process a line type audit ("Lead and Copper") be conducted. There are cost efficiencies gained gathering this information at the time of meter replacements.

Unit Pricing and extended pricing for the Line Type Audit is shown in Table 17A.

Table 17A: Line Type Audit Pricing

Item	Unit Price	Quantity	Extended Price
Line Type Audit	$23.17	12,262	$284,119.51

Service Line Relocates

This scope measure will include 236 accounts to have the service line to the residents house relocated from the current rear lot meter to the new front lot meter location. This can include open trenching, boring, concrete or asphalt removal and repair, landscaping, and/or sod repair. Scope of work to be approved at each address by city staff. City to secure right of entry and other legal documents for work to be performed.

Unit Pricing and extended pricing for the Service Line Relocates is shown in Table 18A.

Table 18A: Service Line Relocates Pricing

Item	Unit Price	Quantity	Extended Price
Service Line Relocates	$8,237.56	236	$1,944,065.12

Pricing Summary

Scope Item	Price
Meters	$6,438,381
Equipment	$228,448
Lids	$208,479
Boxes	$234,539
Curb Stops	$150,210
L&C Study	$284,120
Meter Audit	$75,000
Spare Meters	$36,659
3rd Party Review	$1,995
Line Relocates	$1,944,065
ODA	$50,000
Tyler Tech Fee	$20,000
Total	**$9,671,894**

- All material made obsolete during this work will be disposed of according to state and local requirements.
- Meter Box replacements are for the DFW 1300 Boxes in grass, box replacements do not include traffic rated or boxes in concrete.
- Box replacements are for meters 1.5” and below
- Water Line Survey is included in the project
- Meter installation includes GPS locating

Solid State Water Meters:

Ultrasonic meters use solid-state technology in a compact, totally encapsulated, weatherproof, and UV-resistant housing, suitable for residential and commercial applications. Electronic metering provides information such as, rate of flow and reverse flow indication as well as data not typically available through traditional, mechanical meters and registers. Electronic metering eliminates measurement errors due to sand, suspended particles and pressure fluctuations.

Solid state technology meter features:

- Extended low-flow rate, lower as compared to a typical positive displacement meters, allowing for very low water flows to accurately be measured
- Simplified one-piece electronic meter and register that are integral to the meter body and virtually maintenance free.
- Sealed, non-removable, tamper-protected meter and register.
- Easy-to-read, 9-digit LCD display presents consumption, rate of flow, reverse-flow indication, and alarms.
- High resolution industry standard ASCII encoder protocol.

Solid state technology meters comply with applicable portions of the 2018 revision of ANSI/AWWA Standard C-715 and C-710 for accuracy and pressure loss requirements. The meters are also NSF/ANSI Standard 61 Annex F and G compliant and tested to AWWA standards.

AMI - Advanced Metering Infrastructure

Advanced metering systems are comprised of state-of-the-art electronic/digital hardware and software, which combine interval data measurement with continuously available remote communications. These systems enable measurement of detailed, time-based information and frequent collection and transmittal of such information to various parties. AMI or Advanced Metering Infrastructure typically refers to the full measurement and collection system that includes meters at the customer site, communication networks between the customer and a service provider, such as the City, and data reception and management systems that make the information available to the service provider.

For this project, AMI connects smart water meters to powerful analytic software tools, providing the ability for the City to optimize and improve utility bill management. Additionally, customer portals will allow water customers to manage and track their own water usage.

Features include:

- Customizable dashboards to deliver information in a format matched to your requirements
- Ability to set unique alert conditions to define and monitor exceptions
- Customer service tools, including a consumer engagement website and smart phone/tablet apps, enable access to individual customer information
- Secure, cloud-based – ISO 27001 certified and SOC 2 examined for security, availability and confidentiality
- Automatic software updates
- Built-in API's and data exchange modules support data transfer to utility billing, work order, inventory/asset management, Customer Relationship Management (CRM), Geographic Information Systems (GIS), and other legacy utility systems

Benefits include:

- Web-Based Software
- Custom Integrations
- Device and Meter Readings
- Consumption Profiles
- Multi-Site Visibility
- Multiple Users
- Utility Dashboard Access (Neptune 360)
- Integrated Mapping
- Immediate data of water utility system
- Allows for proactive customer engagement
- Eliminate need for full time meter readers
- Minimize resources used for billing
- AMI integration with billing system
- Minimize customer billing complaints
- Improved customer service
- Estimated meter readings will virtually be eliminated
- The City of Deer Park will be able to collect the information necessary to generate water billing statements with minimal visitation to customer properties
- Customers will be able to track and monitor their water usage via their smart device, this service is provided by city
- Information will be integrated for billing, outage management and water theft prevention
- Monthly water bill data will be significantly enhanced with more detailed information
- The City of Deer Park will be able to provide more information about outages and interruptions minimizing customer complaints and communication difficulties
- If a customer is moving, The City of Deer Park can read customer meters and provide a detailed bill as of the customer move date.

B. DETAILED COMMISSIONING PLAN

Systems Start-up and Commissioning & Operating Parameters

General

Performance Services shall commission all UCRMs, including major equipment and systems, to ensure they are set up to operate as intended and as required to achieve the guaranteed savings. During the final design and construction phases, Performance Services shall develop testing, commissioning and start-up procedures for the equipment, components and systems installed for the UCRMs. These procedures shall be in accordance with the manufacturers' guidelines, system performance objectives, and sequences of operation. Additionally, Performance Services will provide training and instruction for the operation and maintenance of the UCRMs.

Performance Services will provide and be responsible for the commissioning and start-up of all UCRMs at the City of Deer Park. This is accomplished as a continuation with the same team that developed, constructed and engineered the project. Commissioning is the act of statically and dynamically testing the installed equipment and systems, making sure the installed systems work and perform as they were designed. Although a simple concept, it is often overlooked but tremendously important. Because we guarantee performance, Performance Services has a vested interest that all systems, equipment, and controls work as designed and produce the intended results. The commissioning planning process begins during project development phase and is finalized during the implementation phase.

Performance Services believes that commissioning is a team activity, involving not only the Performance Services personnel, but also the customer's personnel, manufacturer's representatives, control technicians and the appropriate subcontractor. The commissioning plan is a valuable tool – for both Performance Services and all City of Deer Park stakeholders involved with the project. It will accomplish the following:

- Verify compliance with specific equipment installation requirements and UCRM design intent
- Verify compliance with a facility's specific performance requirements
- Establish UCRM functional testing protocol and parameters
- Identify unique or seasonal testing requirements
- Coordinate testing requirements for M&V purposes
- Verify completion of commissioning activities and customer concurrence as appropriate

During the Construction Phase, Performance Services will finalize a detailed commissioning plan specific to the UCRMs selected by City of Deer Park. Performance Services' commissioning is a comprehensive process that is an integral part of the design, construction, and operational phases of a project. It will, at a minimum, confirm that the systems and equipment installed by Performance Services fully function as intended and as designed.

The procedures, methods, documentation, and signoff requirements in the plan shall cover each phase of the commissioning process from pre-design through final acceptance and post-occupancy. All equipment will be fully tested and operationally verified in accordance with the manufacturer's operating parameters, requirements and recommendations. Additionally, Performance Services may utilize an authorized manufacturer's representative or qualified consulting engineer, to inspect and approve system installation for major equipment items (i.e., base stations, repeaters, meters, etc.)

Overview of Commissioning Process

Commissioning (Cx) is a systematic process of ensuring that all systems perform interactively according to the design intent and the UCRM performance requirements. This is achieved through a complete commissioning process; beginning at the design phase with documented design and operating intent and continuing through construction and acceptance phases, with actual verification of performance.

Commissioning activities during the design phases are intended to achieve the following specific objectives:

- Provide a plan for the implementation of the commissioning process, including the initial scope of systems to be commissioned for the project.
- Ensure that the design and operational intent are clearly documented.
- Provide a design review focusing on system performance, maintainability, and adherence to UCRM performance requirements.
- Ensure that commissioning for the construction phase is adequately reflected in the bid documents.
- Ensure the various members of the commissioning team clearly understand their responsibilities in their commissioning roles.
- Ensure the applicable equipment and systems are installed properly and receive adequate preoperational checkout.
- Verify and document proper performance of equipment and systems.
- Ensure that operation and maintenance documentation is provided for the continued management of the facility after the construction project is complete.
- Ensure proper training of facilities management, Performance Services Operation & Maintenance and Performance Services Measurement & Verifications personnel.
- This plan does not provide a detailed explanation of required testing procedures. The detailed testing requirements and procedures will be found in the Commissioning Manual and contract specifications to be developed after IGA acceptance. Additionally, this plan does not provide extensive narrative on all commissioning concepts, as may be provided in other commissioning guides.

UCRM specific commissioning check lists will be provided as a separate submittal after the 100% design phase.

C. DETAILED PROJECT MANAGEMENT PLAN

The purpose of this plan is to provide the necessary controls, supervision, inspections, tests and documentation for the utility cost reduction measures and definable features of work (DFOW) required by the Contract. Conformance to this plan will ensure compliance with the Contract documents and applicable standards related to materials, equipment, craftsmanship, finish and functional performance. This plan will assure quality results in keeping with budget, scope and schedule requirements. The Performance Services project management planning is compatible with project management processes and knowledge bases developed by Project Management Institute for the Project Management Professional® certification.

D. CONSTRUCTION CLOSEOUT

Performance Services shall use all reasonable efforts to install the equipment and perform all Services hereunder in accordance with the Installation Schedule and the Scope of work. Performance Services will cooperate and coordinate with City of Deer Park as to facilitate Performance Services performance.

Upon the completion of each URCM and/or per each location, Performance Services will request formal inspection from City of Deer Park. Each of the items of Equipment shall be inspected by Performance Services, City of Deer Park and Performance Services Contractor. These inspections can be scheduled on a weekly basis by means of the construction progress meeting to be held throughout the duration of the Project. The installation of Equipment and Performance Services related Services shall have achieved substantial completion ("Substantial Completion is defined as having beneficial use of equipment") when all Equipment has been physically constructed and installed in accordance with the Equipment/Services Scope Document, except for minor items of work that will not materially affect safe and substantial normal use and operation of the Equipment taken as a whole (such minor items of uncompleted work shall constitute the "Punch List") and the Equipment has successfully completed such operational tests, in accordance with operational standards established by the Equipment manufacturers.

When Performance Services determines that Substantial Completion has been achieved, Performance Services shall provide City of Deer Park a Substantial Completion Notice, along with a list of punch list items of work outstanding and request a formal inspection. City of Deer Park shall accept the Substantial Completion Notice if the applicable requirements of scope of work for that particular URCM have been satisfied and inspected. Within ten days after receipt of Performance Services Substantial Completion Notice, City of Deer Park shall inspect and respond to Performance Services in writing either confirming that Substantial Completion has been achieved or if reasonable cause exists, rejecting such Substantial Completion Notice and specifying in detail the reasons therefore.

If City of Deer Park rejects Performance Services Substantial Completion Notice and/or Punch List, Performance Services shall complete, correct or explain the deficient aspect of its Services, the Substantial Completion Notice or the Punch List, as the case may be, and shall submit an amended Substantial Completion Notice and/or Punch List, as appropriate, whereupon City of Deer Park shall once again respond thereto as provided above.

The date of Substantial Completion shall be deemed to be and relate back to the date upon which Performance Services submitted to City of Deer Park the Substantial Completion Notice which is either approved or deemed approved with comments or punch list by City of Deer Park.

Generally the installation of Equipment and Performance Services related Services hereunder shall have achieved final completion ("Final Completion") when Substantial Completion has been achieved and all Punch List items have been completed. When Performance Services determines that Final Completion has been achieved, Performance Services shall provide City of Deer Park a Final Completion Notice. City of Deer Park shall accept Performance Services Final Completion Notice if the applicable requirements of the URCM have been satisfied. Within ten days after receipt of Performance Services Final Completion Notice, City of Deer Park shall respond to Performance Services in writing either confirming that Final Completion has been achieved or if reasonable cause exists, rejecting such Final Completion Notice and specifying the Punch List items which have not been completed.

If City of Deer Park rejects Performance Services Final Completion Notice, Performance Services shall complete, correct or explain the deficient aspect of its Services or the Final Completion Notice, as the case may be, and shall submit an amended Final Completion Notice, whereupon City of Deer Park shall once again respond thereto as provided above. The date of Final Completion shall be deemed to be and relate back to the date upon which Performance Services submitted to City of Deer Park the Final Completion Notice which is either approved or deemed approved.

E. POST CONSTRUCTION SERVICES

Performance Services Project Management staff will coordinate, schedule and provide training on all the UCRMs implemented. Operation and Maintenance Manuals will be provided in hard copy and electronically. The O&M Manuals will include product data, commissioning and Labor and Material warranties. The warranty documents will clearly outline the procedures for material and labor warranties. Performance Services will assist City of Deer Park with all warranty issues to ensure a quick, smooth and reasonable solution with all materials and workmanship.

Performance Services can offer and manage maintenance plans, re-commissioning plans to ensure that the equipment is maintained, operating properly and achieving the savings as required.

VI. PROJECT FINANCIAL ANALYSIS

The following provides details of the project necessary to quantify cost of installed equipment, guaranteed savings and payback.

Table 19A: Overall Project Summary Table

20 Year Project Cash Flow							
Total Construction Cost							$ 9,669,899
Investment Grade Audit (Included in Total Contract Cost)							$ 39,000
3rd Party Review							$ 1,995
Construction Period (Months)							18.0
Total Construction amount including 3rd Party Review							$ 9,671,894
Term of Financing: 0 years							
				INTEREST RATE: 0.0%			**$ 9,671,894**
Savings			**Payments**				**Cash Flow**
Year	**Additional Water/Sewer Revenue**	**Total**	**Project Cost**	**Annual Service Cost**	**M&V Services**	**Total Annual Payments**	**Net Cash Flow $**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Construction	$207,044	**$207,044**	$9,671,894	$0	$0	**$9,671,894**	-$9,464,850
1	$1,035,222	**$1,035,222**	$0	$43,100	Included	**$43,100**	$992,122
2	$1,035,222	**$1,035,222**	$0	$44,393	$0	**$44,393**	$990,829
3	$1,035,222	**$1,035,222**	$0	$45,725	$0	**$45,725**	$989,497
4	$1,035,222	**$1,035,222**	$0	$47,097	$0	**$47,097**	$988,125
5	$1,035,222	**$1,035,222**	$0	$48,509	$0	**$48,509**	$986,713
6	$1,035,222	**$1,035,222**	$0	$49,965	$0	**$49,965**	$985,257
7	$1,035,222	**$1,035,222**	$0	$51,464	$0	**$51,464**	$983,758
8	$1,035,222	**$1,035,222**	$0	$53,008	$0	**$53,008**	$982,214
9	$1,035,222	**$1,035,222**	$0	$54,598	$0	**$54,598**	$980,624
10	$1,035,222	**$1,035,222**	$0	$56,236	$0	**$56,236**	$978,986
11	$1,035,222	**$1,035,222**	$0	$57,923	$0	**$57,923**	$977,299
12	$1,035,222	**$1,035,222**	$0	$59,660	$0	**$59,660**	$975,562
13	$1,035,222	**$1,035,222**	$0	$61,450	$0	**$61,450**	$973,772
14	$1,035,222	**$1,035,222**	$0	$63,294	$0	**$63,294**	$971,928
15	$1,035,222	**$1,035,222**	$0	$65,193	$0	**$65,193**	$970,029
16	$1,035,222	**$1,035,222**	$0	$67,148	$0	**$67,148**	$968,074
17	$1,035,222	**$1,035,222**	$0	$69,163	$0	**$69,163**	$966,059
18	$1,035,222	**$1,035,222**	$0	$71,238	$0	**$71,238**	$963,984
19	$1,035,222	**$1,035,222**	$0	$73,375	$0	**$73,375**	$961,847
20	$1,035,222	**$1,035,222**	$0	$75,576	$0	**$75,576**	$959,646
Total	$20,911,484	**$20,911,484**	$9,671,894	$1,158,113	$0	**$10,830,007**	**$10,081,477**

Annual Service Costs = Neptune 360 AMI Software ($24,524) + Tyler Tech ERP Pro ($18,576)
Annual Service Costs are represented with a 3% annual escalator. The annual service costs are paid to Neptune and Tyler Tech.

VII. APPENDICES

A – DETAILED BACKUP CALCULATIONS & COMPUTER INPUT/OUTPUT SHEETS
B – IMPLEMENTATION PLAN

A. DETAILED BACKUP CALCULATIONS & COMPUTER INPUT/OUTPUT SHEETS

Spreadsheet Analysis

1. UCRM #1 - Water Meters w/ AMI

UCRM-1 Water Meter w/ AMI Savings

The below table shows the increase in water/sewer revenue based on the current meter accuracy versus the accuracy of new future water meters.

Table 20A: Calculated Water Recovery

Water Meter Size	Baseline Water to Meters @ 100% Accuracy (gal/yr)*	Measured Meter Accuracy	Baseline Billed Water per Mtr Size (gal/yr)	New Meter Accuracy	Future Water Measured w/ New Meters (gal)	Annual Billed Water Increase (gal)	Annual Billed Water Increase ($)
5/8" Meters	587,970,636	86.4%	507,841,375	98.5%	579,151,076	71,309,701	$861,181
1" Meters	426,810,210	94.0%	401,208,000	98.5%	420,408,057	19,200,057	$231,872
1.5" Meters	27,589,600	95.9%	26,462,500	98.5%	27,175,756	713,256	$8,614
2" Meters	49,870,064	97.2%	48,481,125	98.5%	49,122,014	640,889	$7,740
3" Meters	16,094,920	95.2%	15,330,000	98.5%	15,853,496	523,496	$6,322
4" Meters	21,785,078	87.1%	18,980,000	98.5%	21,458,302	2,478,302	$29,930
6" Meters	33,145,766	93.6%	31,025,000	98.5%	32,648,579	1,623,579	$19,607
8" Meters	18,460,076	98.9%	18,250,000	98.5%	18,183,175	-66,825	-$807
10" Meters	11,116,751	98.5%	10,950,000	98.5%	10,950,000	0	$0
Totals	1,192,843,100		1,078,528,000		1,174,950,454	**96,422,454**	**$1,164,458**
						88% Safety Factor	
						91,601,331	**$1,035,222**

* Baseline water production determined from billed water documentation and measured meter accuracy. Best data available.

Water Rate ($/kgal): $6.40 Residential & Commercial

Sewer Rate ($/kgal): $6.68 Residential & Commercial

B. IMPLEMENTATION PLAN

Meter Order and Delivery Timeline – 6 Months
Meter Installation – 12 Months
Line Type Audit – 12 Months

EXHIBIT B - PROJECT IMPROVEMENT LIST

710 E. San Augustine
Deer Park, TX 77536

Conducted by:

Performance Services

801 E. Old Settlers Blvd
Suite 100
Round Rock, Texas 78664
February 27, 2024

Table 1B: Utility Cost Reduction Measures Table

Measure Type	Utility Cost Reduction Measure
Water	Water Meters w/AMI

Project scope of work specifics follow:

UCRM-1: Water Meters w/AMI

Water Meters

PSI recommends replacement of the existing residential and commercial water meters with Neptune Mach 10 R900i water meters. Benefits include:

- Accurate flow measurements at extended-low, low, medium and high flows
- No moving parts
- Reduced maintenance
- 20-year accuracy guarantee
- More accurate customer billing
- More accurate and higher billed water/sewer revenues

This measure includes replacing the following quantity and size of water meters:

Table 2B: Water Meter Count

Meter Size	Quantity
5/8"x3/4"	9,074
1"	2,748
1.5"	145
2"	253
3"	21
4"	13
6"	5
8"	2
10"	1
Total	**12,262**

Unit Pricing and extended pricing for the Water Meters is shown in Table 3B.

Table 3B: Water Meter Pricing

Meter Size	Unit Price	Quantity	Extended Price
5/8"x3/4"	$468.17	9,074	$4,248,162
1"	$525.91	2,748	$1,445,199
1.5"	$1,240.65	145	$179,894
2"	$1,318.67	253	$333,625
3"	$4,489.74	21	$94,284
4"	$5,491.62	13	$71,391
6"	$8,253.81	5	$41,269
8"	$12,278.50	2	$24,557
10"	$17,166.18	1	$17,166
	Total	**12,262**	**$6,438,381**

AMI Communication Infrastructure and Equipment

Based on the R900 Tailored Analysis Propagation Study, communication coverage for the city is possible with (4) R900 AMI Gateways. The locations for the Gateways are as follows:

1) Pasadena Water Tower
2) Avon Water Tower
3) Coy Water Tower
4) Fire Station #3

In addition to the R900 AMI Gateways, a portable data collector and Backhaul Communications is recommended.

Unit Pricing and extended pricing for the AMI Communication Infrastructure and Equipment is shown in Table 4B.

Table 4B: AMI Communication Infrastructure and Equipment Pricing

Item	Unit Price	Quantity	Extended Price
Portable Data Collector	$11,766.64	1	$11,766.64
Data Collector Station	$21,879.08	4	$87,516.32
Data Collector Station Set Up	$31,211.24	4	$124,844.96
70' Self Supporting Tower	$100,000.00	0	$0.00
Backhaul Communications	$1,080.00	4	$4,320.00
		Total	**$228,447.92**

Meter Boxes and Lids

Based on the field audit of the water meters, 10.58% of the boxes were visibly damaged and need to be replaced. Due to hidden and unknown conditions PSI recommends a budget for replacing up to 15% of the meter boxes and 100% of the meter box lids. Lid replacement is recommended for the functionality and reception of the meter antenna.

Unit Pricing and extended pricing for the Meter Boxes and Lids is shown in Table 5B.

Table 5B: Meter Boxes and Lids Pricing

Item	Unit Price	Quantity	Extended Price
Meter Boxes	$127.52	1,839	$234,538.83
Meter Lids	$17.00	12,262	$208,478.96
		Total	**$443,017.79**

Curb Stops

The functionality of the curb stops in place is difficult to identify without removal of the meters, however during the meter testing 3.6% of the curb stops showed leaks or failures. PSI recommends a budget allowance for replacing 5% of the curb stops.

Unit Pricing and extended pricing for the Curb Stops are shown in Table 6B.

Table 6B: Curb Stops Pricing

Item	Unit Price	Quantity	Extended Price
Curb Stops	$245.00	613	$150,209.50

Line Type Audit

PSI recommends that during the meter change out process a line type audit ("Lead and Copper") be conducted. There are cost efficiencies gained gathering this information at the time of meter replacements.

Unit Pricing and extended pricing for the Line Type Audit is shown in Table 7B.

Table 7B: Line Type Audit Pricing

Item	Unit Price	Quantity	Extended Price
Line Type Audit	$23.17	12,262	$284,119.51

Service Line Relocates

This scope measure will include 236 accounts to have the service line to the residents house relocated from the current rear lot meter to the new front lot meter location. This can include open trenching, boring, concrete or asphalt removal and repair, landscaping, and/or sod repair. Scope of work to be approved at each address by city staff. City to secure right of entry and other legal documents for work to be performed.

Unit Pricing and extended pricing for the Service Line Relocates is shown in Table 8B.

Table 8B: Service Line Relocates Pricing

Item	Unit Price	Quantity	Extended Price
Service Line Relocates	$8,237.56	236	$1,944,065.12

Pricing Summary

Scope Item	Price
Meters	$6,438,381
Equipment	$228,448
Lids	$208,479
Boxes	$234,539
Curb Stops	$150,210
L&C Study	$284,120
Meter Audit	$75,000
Spare Meters	$36,659
3rd Party Review	$1,995
Line Relocates	$1,944,065
ODA	$50,000
Tyler Tech Fee	$20,000
Total	**$9,671,894**

- All material made obsolete during this work will be disposed of according to state and local requirements.
- Meter Box replacements are for the DFW 1300 Boxes in grass, box replacements do not include traffic rated or boxes in concrete.
- Box replacements are for meters 1.5" and below
- Water Line Survey is included in the project
- Meter installation includes GPS locating

Solid State Water Meters:

Ultrasonic meters use solid-state technology in a compact, totally encapsulated, weatherproof, and UV-resistant housing, suitable for residential and commercial applications. Electronic metering provides information such as, rate of flow and reverse flow indication as well as data not typically available through traditional, mechanical meters and registers. Electronic metering eliminates measurement errors due to sand, suspended particles and pressure fluctuations.

Solid state technology meter features:

- Extended low-flow rate, lower as compared to a typical positive displacement meters, allowing for very low water flows to accurately be measured
- Simplified one-piece electronic meter and register that are integral to the meter body and virtually maintenance free.
- Sealed, non-removable, tamper-protected meter and register.
- Easy-to-read, 9-digit LCD display presents consumption, rate of flow, reverse-flow indication, and alarms.
- High resolution industry standard ASCII encoder protocol.

Solid state technology meters comply with applicable portions of the 2018 revision of ANSI/AWWA Standard C-715 and C-710 for accuracy and pressure loss requirements. The meters are also NSF/ANSI Standard 61 Annex F and G compliant and tested to AWWA standards.

AMI - Advanced Metering Infrastructure

Advanced metering systems are comprised of state-of-the-art electronic/digital hardware and software, which combine interval data measurement with continuously available remote communications. These systems enable measurement of detailed, time-based information and frequent collection and transmittal of such information to various parties. AMI or Advanced Metering Infrastructure typically refers to the full measurement and collection system that includes meters at the customer site, communication networks between the customer and a service provider, such as the City, and data reception and management systems that make the information available to the service provider.

For this project, AMI connects smart water meters to powerful analytic software tools, providing the ability for the City to optimize and improve utility bill management. Additionally, customer portals will allow water customers to manage and track their own water usage.

Features include:

- Customizable dashboards to deliver information in a format matched to your requirements
- Ability to set unique alert conditions to define and monitor exceptions
- Customer service tools, including a consumer engagement website and smart phone/tablet apps, enable access to individual customer information
- Secure, cloud-based – ISO 27001 certified and SOC 2 examined for security, availability and confidentiality
- Automatic software updates
- Built-in API's and data exchange modules support data transfer to utility billing, work order, inventory/asset management, Customer Relationship Management (CRM), Geographic Information Systems (GIS), and other legacy utility systems

Benefits include:

- Web-Based Software
- Custom Integrations
- Device and Meter Readings
- Consumption Profiles
- Multi-Site Visibility
- Multiple Users
- Utility Dashboard Access (Neptune 360)
- Integrated Mapping
- Immediate data of water utility system

- Allows for proactive customer engagement
- Eliminate need for full time meter readers
- Minimize resources used for billing
- AMI integration with billing system
- Minimize customer billing complaints
- Improved customer service
- Estimated meter readings will virtually be eliminated
- The City of Deer Park will be able to collect the information necessary to generate water billing statements with minimal visitation to customer properties
- Customers will be able to track and monitor their water usage via their smart device, this service is provided by city
- Information will be integrated for billing, outage management and water theft prevention
- Monthly water bill data will be significantly enhanced with more detailed information
- The City of Deer Park will be able to provide more information about outages and interruptions minimizing customer complaints and communication difficulties
- If a customer is moving, The City of Deer Park can read customer meters and provide a detailed bill as of the customer move date.

EXHIBIT C - MEASUREMENT AND VERIFICATION PLAN

710 E. San Augustine
Deer Park, TX 77536

Conducted by:

Performance Services

801 E. Old Settlers Blvd
Suite 100
Round Rock, Texas 78664
February 27, 2024

Pursuant to the terms of that certain Energy Performance Contract between City of Deer Park ("Deer Park") and Performance Services, Inc. ("ESCO") dated August 15,2023 (the "Contract"), ESCO shall perform the energy and water savings measurement and verification as defined within this Measurement and Verification Plan (the "Plan").

GUARANTEED SAVINGS

ESCO shall guarantee energy savings ("Energy Savings") pursuant to the terms of Exhibit D to the Contract, the Performance Guarantee Agreement (the "Guarantee"). The term of the Plan shall equal the term of the Guarantee. Energy Savings are calculated based on the installation of Utility Cost Reduction Measures ("UCRMs") which are designed to reduce water/sewer usage (kGal).

Operational savings ("Operational Savings") for maintenance, as identified and calculated in Exhibit A to the Contract, Investment Grade Audit (the "IGA"), are agreed to and stipulated by Deer Park for the term of the Guarantee. ESCO and Deer Park agree for the term of the Guarantee that the annual Utility Rate escalation factor will be 0% for additional water and sewer revenue.

Energy Savings and Operational Savings shall be collectively referred to herein as "Guaranteed Savings".

Schedule A of the Plan contains the methodology and calculations used to determine Guaranteed Savings achieved as a result of the installation of the UCRMs, as well as the methodology that ESCO will use to measure, verify, and report on Guaranteed Savings achieved annually during the term of the Guarantee.

Pursuant to the Guarantee, Annual Savings are as follows:

Table 1C – Annual Revenue/Savings

Savings		
Year	Additional Water/Sewer Revenue	Total
1	2	3
Construction	$207,044	**$207,044**
1	$1,035,222	**$1,035,222**
2	$1,035,222	**$1,035,222**
3	$1,035,222	**$1,035,222**
4	$1,035,222	**$1,035,222**
5	$1,035,222	**$1,035,222**
6	$1,035,222	**$1,035,222**
7	$1,035,222	**$1,035,222**
8	$1,035,222	**$1,035,222**
9	$1,035,222	**$1,035,222**
10	$1,035,222	**$1,035,222**
11	$1,035,222	**$1,035,222**
12	$1,035,222	**$1,035,222**
13	$1,035,222	**$1,035,222**
14	$1,035,222	**$1,035,222**
15	$1,035,222	**$1,035,222**
16	$1,035,222	**$1,035,222**
17	$1,035,222	**$1,035,222**
18	$1,035,222	**$1,035,222**
19	$1,035,222	**$1,035,222**
20	$1,035,222	**$1,035,222**
Total	$20,911,492	**$20,911,492**

Table 2C below provides the annual fees for the Plan:

Table 2C – Annual M&V FEE

M&V SERVICES COST IS INCLUDED IN THE PROJECT COST.

INFORMATION AND ITEMS TO BE FURNISHED BY DEER PARK:

Deer Park shall furnish to ESCO any design, construction, maintenance, or operating documents/manuals; utility billing data for water/sewer consumption, bills and other information necessary to provide services under the Plan. To the fullest extent possible, information shall be delivered or made available in electronic media form and universal file formats (Text, comma delimited files, PDF, JPEG).

During the term of the Plan, Deer Park shall furnish a secure area for the storage of required materials and provide and arrange access for ESCO to such secure area as may be necessary for expeditious and orderly performance of the services under the Plan.

UTILITY RATES AND BASELINE ASSUMPTIONS:

The Guaranteed Savings shall be based on the utility cost per unit established and agreed to by both parties which is defined in the Energy, Water, Sewer, and O&M Rate Data section of the Plan – Exhibit A. For each year, the dollar savings shall be calculated based on the baseline unit cost of water and sewer as defined within Schedule A of the Plan including escalation. This includes, but is not limited to, assumptions about facility usage, occupancy, operating schedules, anticipated increases/decreases in population, configuration, and equipment. Changes to any or all assumptions will be cause for adjustment of the Guaranteed Savings baseline as agreed to by both parties.

BASELINE CONDITIONS:

The baseline conditions for calculation of the Guaranteed Savings are set forth in Schedule A of the Plan. If the actual conditions vary from the baseline conditions during the term of the Guarantee, the Guaranteed Savings calculations shall be adjusted to reflect the new baseline conditions.

ANNUAL REPORT:

ESCO will prepare and submit to Deer Park an annual M&V report within ninety (90) days of the anniversary of commencement date of the Plan.

MATERIAL CHANGES TO UCRM:

From time to time, Deer Park may need to make changes or modifications to its facilities, which may affect the M&V Plan and/or the Guarantee. Minor changes to facilities can be accommodated by means of a baseline and or savings adjustment, subject to agreement by both parties. Any major change affecting more than 25% of the Guaranteed Savings for any given UCRM or facility or more than 10% of the total Guaranteed Savings shall be classified as a "Material Change" and shall be cause for full or partial termination of the Plan and Guarantee.

Upon formal notification of a qualifying Material Change by Deer Park, ESCO will prepare and submit, within 30 days, a termination proposal for the Guarantee and the Plan, which shall be reasonably agreed to by the parties.

EQUIPMENT MAINTENANCE AND OPERATION RESPONSIBILITY:

Deer Park agrees to maintain its facilities, systems affecting water consumption, such that the condition of the facilities during the term of the Guarantee is at least equal to their condition at the completion of this Contract. Deer Park also agrees to properly maintain (in accordance with manufacturer's guidelines and specifications) all new and existing equipment and operate all new and existing systems as described in the Proposal, Contract and Guarantee. If Deer Park fails to operate its facilities as described herein and such failure results in reduced Energy Savings or Operational Savings, then the Guarantee and the Plan shall be adjusted accordingly.

BASELINE WATER/SEWER CONSUMPTION & METHODS TO ADJUST

The Baseline for Water/Sewer annual consumption has been established through analysis of utility billing data and analysis of data trends acquired by Performance Services during the IGA. The following table contains the agreed upon baselines for this project.

Table 3C: WATER SUPPLIED/BILLED BASELINE

Baseline Water (2023)	
Water Supplied (gal)	1,385,994,000
Water Billed (gal)	1,078,528,000
Non Revenue Water (gal)	307,466,000

Table 4C: Meter Size Baseline Water Usage Summary

Water Meter Size	Quantity	Flow (gpd)	gal by Mtr Size	% Flow by Mtr
5/8"x3/4"	9,074	153	507,841,375	47.1%
1"	2,748	400	401,208,000	37.2%
1.5"	145	500	26,462,500	2.5%
2"	253	525	48,481,125	4.5%
3"	21	2,000	15,330,000	1.4%
4"	13	4,000	18,980,000	1.8%
6"	5	17,000	31,025,000	2.9%
8"	2	25,000	18,250,000	1.7%
10"	1	30,000	10,950,000	1.0%
TOTAL			**1,078,528,000**	**100.0%**

Methods to Adjust Utility Consumption

General Savings Equation:

Savings = (Post Installation Measured Water - Baseline Measured Water) ± Adjustments

The purpose of adjustments is to express both baseline and post-installation utility under the same set of conditions. The modifications to the savings can be further distinguished as routine and non-routine adjustments, as shown in the Expanded Utility Savings Equation.

Utility Savings Equation:

Savings = (Post Installation Measured Water - Baseline Measured Water) ±Routine Adjustments ± Non Routine Adjustments

Routine Adjustments

Routine adjustments are used to account for expected variations in independent variables and utility use. These adjustments often use regression analysis to correlate and adjust utility use to independent variables such as weather, but simple comparisons may also be employed. Routine adjustments are used to normalize utility use as a function of one or more independent parameters.

Alternatively, baseline and performance period conditions could be normalized to either baseline or performance period conditions. If performance period conditions are used to adjust the baseline case, the savings calculated will estimate the actual avoided utility use for that period.

One of the key assumptions made when normalizing savings is that the performance period utility use will have a predictable relationship to the independent variables to be standardized. The baseline model will be completely defined in the contract, but the performance period model will need to be developed from measured data collected during the performance period. Typically, a valid baseline model indicates that a similar performance period model can be successfully developed.

Once the baseline and performance period models of the meter's water accuracy and the parameter(s) are established and validated, the standardized values of the independent parameters can be used to drive both models and calculate savings.

Therefore, a project-specific M&V Plan should identify critical independent variables, explain how these variables will be measured or documented, and discuss how they will be used in the empirical models. Additionally, assumptions and mathematical formulas used in the M&V Plan must be clearly stated, and the validity of any mathematical model used should be verified.

RECOMMENDED M & V OPTIONS

Each method is appropriate for certain types of conservation projects, and has its associated benefits, risks, and cost. Due to the interconnections of many of the UCRMs savings, PSI proposes to use primarily one M&V Option for this project: 1) Option A – Retrofit Isolation with Key Parameter measurement (instantaneous or short term). These methods will verify with a high degree of confidence that the savings are being achieved without adding excessive cost to the project. This Option will be used to verify the savings for the proposed UCRMs. Details are as follows:

Table 5C: M&V Option Recommendations

UCRM	Description	M&V Method
1	Water Meters w/ AMI	A

Option A - Retrofit Isolation: Key Parameter Measurement

Performance Services has selected Option A for the following UCRMs:

UCRM 1 – Water Meters w/AMI

Performance Services proposes the replacement of the 12,262 existing residential and commercial meters along with AMI. Benefits include:

- Accurate flow measurements at ultra-low, low, medium, and high flows
- No moving parts in residential and commercial meters
- Reduced operations and maintenance
- 20-year accuracy guarantee
- More accurate customer billing
- Higher billed water/sewer revenues

The key measurement parameters will be the water flow accuracy of the pre and post project water meters. The measurements will be performed on a statistically significant quantity (sample) of pre and post-retrofit fixtures. Water flow measurements will be made by a company specializing in water meter testing with testing done in accordance with AWWA standards. Flow accuracies will be measured at low, medium and high flow conditions. The frequency of measuring post flow accuracies will meet or exceed Texas Government Code 302.001.

The number of meters and size of meters to be selected for measurement is based on the use of statistical sampling method (described below) to ensure reasonable sample populations and confidence level (CL) in the results of the samples.

- Performance Services uses the water billing software to identify the meters to measure pre- and post-implementation.
- For flow accuracy measurements, Performance Services identified the size of water meters passing 50% or greater of the total water supplied to customers based on the water balance in the IGA. The remaining percent of total connected water meters have a lesser effect on the savings results and these fixtures may not be measured.
    - Performance Services will use Coefficient of Variation (C_V) of 0.5 for pre- and post-retrofit
    - Performance Services will use Confidence Level (CL) to be 90%
    - Performance Services will use Precision to be 20%.
    - Where field accuracy testing data is not available, factory testing data may be used in the project savings analysis
    - Based on the meter quantity an expected sample size will be selected. Minimum sample size per applicable meter type will be 3 pre-retrofit samples and 3 samples post-retrofit. Additional samples might be required to meet the expected statistical parameters described above.

Savings Formula

$$US = W_{BASE} \times (M_{POST} - M_{BASE})$$

Where:

US	=	Total increase in billable water (gallons)
W_{BASE}	=	Measured baseline water supplied at 100% Accuracy (gallons)
M_{BASE}	=	Measured pre-implementation water meter accuracy (%)
M_{POST}	=	Measured post-implementation water meter accuracy (%)

Utility savings (additional billable water) was calculated using manufacture data and spreadsheet calculations. Savings calculated from baseline water production will be equal to or greater than the values included in the following savings calculation tables:

Savings include operational savings which are consistent with actual cost according to Deer Park. Operational savings is agree-to for the life of the project and will not be verified under the annual energy savings report.

Baseline Water Meter Accuracy and Baseline Water Supply

Baseline water meter accuracy was determined by independent third-party testing. Testing followed AWWA standards. Baseline pre-implementation meter accuracies follow:

Table 6C: Baseline Meter Accuracies

Meter Size	Accuracy
5/8"	86.37%
1"	94.00%
1.5"	95.91%
2"	97.21%
3"	95.25%
4"	87.12%
6"	93.60%
8"	98.86%

Note, at the time the meter testing was performed based on the initial meter list the 10” meters weren’t identified and not tested. No revenue increases are calculated for these meters.

Water Meter Testing Data

Water meter accuracy testing data is located in Exhibit E

Table 7C: Existing Water Baselines

Baseline Water (2023)	
Water Supplied (gal)	1,385,994,000
Water Billed (gal)	1,078,528,000
Non Revenue Water (gal)	307,466,000

Table 8C: Baseline Percentage of Water Flow by Meter Size

Water Meter Size	Quantity	Flow (gpd)	gal by Mtr Size	% Flow by Mtr
5/8"x3/4"	9,074	153	507,841,375	47.1%
1"	2,748	400	401,208,000	37.2%
1.5"	145	500	26,462,500	2.5%
2"	253	525	48,481,125	4.5%
3"	21	2,000	15,330,000	1.4%
4"	13	4,000	18,980,000	1.8%
6"	5	17,000	31,025,000	2.9%
8"	2	25,000	18,250,000	1.7%
10"	1	30,000	10,950,000	1.0%
TOTAL			**1,078,528,000**	**100.0%**

Table 9C: Table to be used in Determining Actual Annual Saving

Water Meter Size	Baseline Water to Meters @ 100% Accuracy (gal/yr)*	Measured Meter Accuracy	Baseline Billed Water per Mtr Size (gal/yr)	New Meter Accuracy	Future Water Measured w/ New Meters (gal)	Annual Billed Water Increase (gal)	Annual Billed Water Increase ($)
5/8" Meters	507,688,878	86.4%	438,500,500	TBD	Calculated	Calculated	Calculated
1" Meters	425,101,727	94.0%	399,602,000	TBD	Calculated	Calculated	Calculated
1.5" Meters	30,443,696	95.9%	29,200,000	TBD	Calculated	Calculated	Calculated
2" Meters	52,826,788	97.2%	51,355,500	TBD	Calculated	Calculated	Calculated
3" Meters	20,693,469	95.2%	19,710,000	TBD	Calculated	Calculated	Calculated
4" Meters	40,218,605	87.1%	35,040,000	TBD	Calculated	Calculated	Calculated
6" Meters	59,662,378	93.6%	55,845,000	TBD	Calculated	Calculated	Calculated
8" Meters	27,690,113	98.9%	27,375,000	TBD	Calculated	Calculated	Calculated
10" Meters	22,233,503	98.5%	21,900,000	TBD	Calculated	Calculated	Calculated
Totals	1,186,559,156		1,078,528,000		**Calculated**	**Calculated**	**Calculated**

Water Rate Data

For additional revenue calculations, Performance Services in collaboration with Deer Park, have agreed to use the rates as shown on page 11. Performance Services and Deer Park agree for the term of this Agreement that the annual Utility Rate escalation factor will be 0% for sewer and water.

This appendix introduces the statistical background, theory and formulas used to select, analyze, and validate samples for project monitoring and evaluation. It also provides guidelines and procedures for the design and implementation of sampling.

The purpose of monitoring a sample, as an alternative to monitoring an entire population is to; (a) characterize particular attributes of a population from which a sample is drawn with adequate accuracy and reliability, while (b) reducing monitoring costs and effort.

As shown in figure below, sampling involves selecting several members from a population for monitoring and evaluation. The measured characteristics or behavior of the sample group is then used to infer the characteristics and/or behavior of the entire population. As expected, the assumption is that the sample is representative of the population. To ensure that the sample is indeed representative, calculations must be performed to assess and quantify the statistical validity of the sampled data. These calculations are presented later in this Appendix.

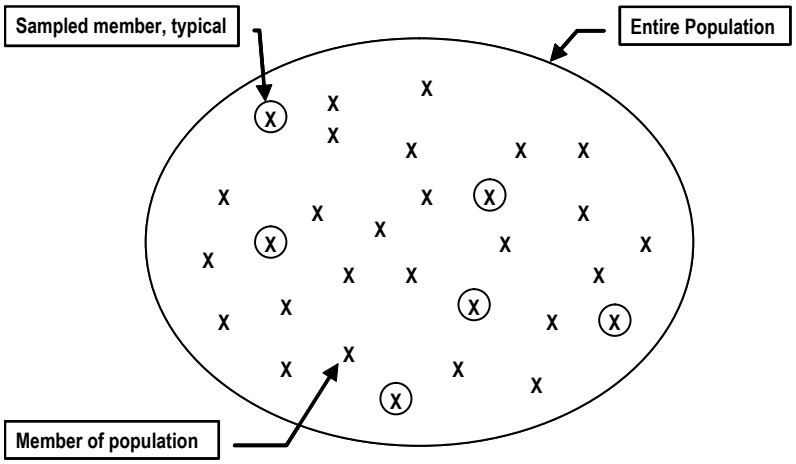

Figure 1 – Population and Sample

Sampling is applicable to projects such as lighting retrofits, energy efficient motor replacements, HVAC unit replacement, water retrofits, or any other project in which several similar pieces of equipment are affected by the same type of UCRM.

In the most common applications, sampling strategies are used to characterize the hours of operation and the instantaneous power draw of a constant-load device. A separate sample set is required for each item evaluated.

When selecting a sample from a population to determine hours of operation, it is necessary to ensure that the load or device being sampled is monitored at or down-stream of its last point of control (LPC).

The last point of control (LPC) is the portion of an electrical circuit (or other source of energy), that serves a set of equipment that is controlled on a single switch. As a result, all fixtures, or pieces of equipment on that LPC are typically operated the same number of hours per year.

For metering purposes, it is assumed that measurements taken of a single piece of equipment on an LPC captures the operating hours for all equipment served on the same circuit.

Mathematical Methods for Sampling

Sampling must be conducted using accepted methods and use an appropriate level of care to ensure that the M&V results that rely on the sampling and analysis are sufficiently accurate. This section provides a summary of the concepts, methods, and equations to be used.

Although various assumptions regarding the distribution of the sampled data can be made, most sampling statistical analysis assumes that the data is normally distributed about the mean and in this Appendix, this assumption is made.

Statistical validity requires that the samples be randomly selected. Use of a random number generator, such as that found in MS Excel™ is convenient for ensuring the sample is randomly selected.

Point Estimation – Confidence and Precision

When we use sampling to estimate an average value of an entire population, we are performing an activity know as point estimation. A value or 'point' that is estimated based on a sample is not the actual average value but rather, is a value that is "reasonably close" to the actual average value. The question, then, for the M&V practitioner is: "What do we mean when we say 'reasonably close'?" The question is answered using the following statistical terms.

- Confidence: Confidence is fundamentally the same as probability, except that confidence refers to data already obtained, while probability refers to a future value. A confidence of 90% is commonly used in M&V. So, using our 90% example, when we refer to a

confidence level, we are saying "I am 90% confident that the measured value is within my stated confidence interval."

- Confidence Interval (or Precision): Because the value estimated by sampling cannot be expected to be the actual value, it is useful to state an interval in which we have confidence the true value lies. Confidence interval is also often referred to as precision. An M&V practitioner may state that they know the value has a precision of 20%, which would mean that the "The estimate is within 20% of the true value."

Confidence and precision, then, are the values referred to when a 90/20 (or 80/20 or any other) criteria is specified.

EXAMPLE

Imagine that we wish to measure the run-hours of a sample of equipment for a month. Imagine now that we measure 200 'on' hours. If we are hoping to meet a 90/20 criteria, we are hoping that we can say, with a 90% probability, that our estimate is within 20% of the actual average run hours – that is, we are 9/10th sure the actual runtime is between 180 and 220 hours.

To graphically illustrate the concepts of normal distribution, confidence, and precision, shows a normal distribution with a confidence interval. Note that the confidence interval in the figure is defined by the error (+/- E). This error figure is discussed further below.

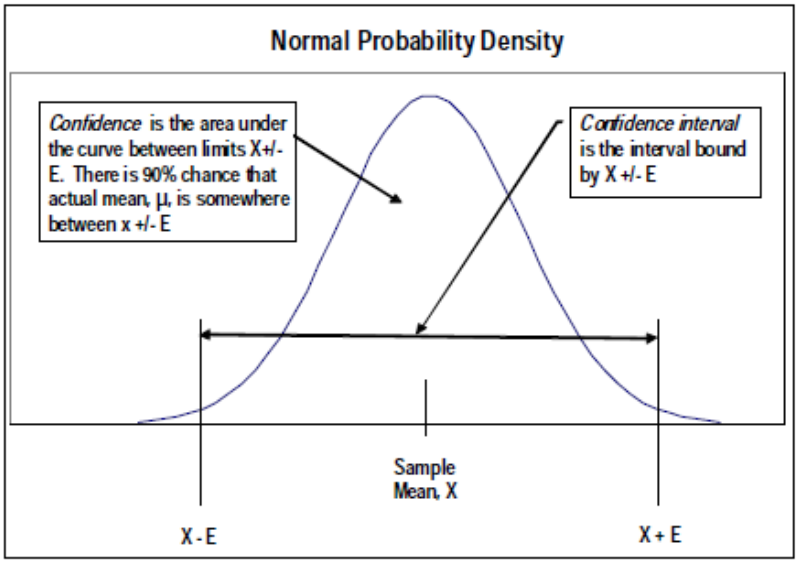

Figure 2 – Normal distribution with confidence interval

The confidence interval (or precision) and the confidence level are positively linked; for any sample, as the confidence interval increases (that is, the precision is reduced, and the range of possible values of the true mean increases) the confidence level increases. Or, looking at it another way, as the confidence interval is reduced, the confidence level is also reduced.

Application of Sampling to Projects

In the next sections considerations for the design and application of sampling are explored. The analysis steps to be used in conducting sampling are as follows:

These steps are discussed below.

Compile Project/UCRM and M&V Plan Information

In this step, the goal is to fully understand several things, including: the measure scope, the savings calculations quantifying the intended performance, the M&V method to be used and the data to be collected. Once the project is understood, an M&V practitioner can identify the calculation method and select variables to be sampled.

In many energy conservation projects, it is often necessary to conduct both pre and post installation sampling. Regardless of whether the sampling is for evaluating the baseline or the post-retrofit conditions, the following information is typically required to properly assign usage groups and determine sample sizes.

- ***Number of circuits, devices or LPCs.*** Identify and document the LPCs that are affected by the installation of UCRMs. This should be provided in the form of an equipment inventory survey in which each line in the survey represents an LPC that includes descriptions of affected and proposed UCRM nameplate data and quantity as well as location information.
- ***Actual or change in load or wattage.*** Using the equipment inventory survey, the total change in load or wattage of the affected equipment by usage group can be computed.

***Hours of operation*.** Sampling can be used to estimate the average hours of operation of the equipment. After the first sampling period (whether it is a year, month, or week) of monitoring, the sampling result should be used to compute the sample size. If it is expected that the equipment will be used in a significantly different in the current period than it was in the previous period, the estimate may be adjusted. Lighting hours of operation have already been established and defined herein.

Designate Sampling Groups

Each device or LPC should be assigned to a usage group based on similarities in the parameter being determined, such as operating hours or connected load. If differences are expected, but there are too few usage groups, the resulting variance of the data may result in unsatisfactory confidence and precision levels. However, if too many usage groups are created, then excessive monitoring and too small of populations may occur. So, while considering the tradeoffs, usage groups should be developed from criteria such as:

- Area type (example: office, hallway, meeting room)
- Annual operating hours
- Timing / usage patterns of the operating hours, load, or other variable
- Variability of operating hours, load, or another variable

Similar functional use

Usage groups should be selected so that equipment or LPC's are similar in that the sampled value (example: hours or kW or kW/unit) is clustered around a specific estimate. When possible, avoid designating usage groups with populations that will yield less than 10 sample points.

Examples of standard usage groups for fan motors with similar operating hours are HVAC ventilation supply fans, return fans, and exhaust fans.

Examples of standard usage groups to determine lighting operating hours are fixtures with similar operating characteristics in offices, laboratories, hallways, stairwells, common areas, perimeters, storage areas, etc.

Usage groups may be defined for the population on a building-by-building basis or across several buildings with similar usage areas. Monitoring can be done for a single or multiple building provided the usage groups are similar. Defining populations for multiple buildings is acceptable and usually results in fewer monitoring points than if each building were considered separately.

Select Samples

Select desired confidence and precision levels. A 90/20 confidence/precision level is commonly used in M&V and is suggested.

Establishing the Coefficient of Variation. Prior to selecting a sample, an estimate of the sampled coefficient of variation (C_v) must be made. A C_v of 0.5 has been historically recommended, and numerous projects have shown this to be reasonable guess for most applications. After the first

year of monitoring, the coefficient of variation for each usage group can be projected from the results of the metering in the previous year.

It is strongly recommended that oversampling (at a 10% or greater level) be included in case of data collection device failure or unexpectedly high data scatter.

Table 10C illustrates the effect of confidence interval and precision on sample size.

TABLE 10C: FIRST-YEAR (C_V=0.5) SAMPLE SIZE TABLE BASED ON USAGE GROUP SAMPLING[1]

Precision	20%	20%	10%
Confidence	80%	90%	90%
Z-Statistic	1.282	1.645	1.645
Population Size, N	**Sample Size, n***		
4	3	4	4
8	5	6	8
12	6	8	11
16	7	9	13
20	8	10	16
25	8	11	19
30	9	11	21
35	9	12	24
40	9	12	26
45	9	13	28
50	10	13	29
60	10	14	32
70	10	14	35
90	10	15	39
100	10	15	41
125	11	15	45
200	11	16	51
300	11	17	56
400	11	17	59
500	11	17	60
Infinite	11	17	68

The samples in each usage group should be drawn at random[2], so that each member has an equal probability of being selected.

If there is reason to believe that there are significant seasonal variations in the operation of the equipment, sufficient monitoring will need to be conducted to capture these variations.

[1] Table does not reflect oversampling. However, because data collection problems are very, very common and because of the departure from normal distribution for small samples (less than 30), over-sampling is critical.

TABLE 11C: REPRESENTATIVE MONITORING EQUIPMENT USED FOR MEASUREMENT & VERIFICATION

	Manufacturer	Model	Measurement	Range	Accuracy
Lighting & Occupancy Time of Use	Hobo	Datalogger	-	-	-
Temperature & Relative Humidity	Hobo	U10-003	Temperature	-4 °F to 158 °F	± 0.72 °F
			Relative Humidity	25% to 95%	± 3.5%
Temperature & Relative Humidity + 2 External Inputs	Hobo	U12-013	Temperature	-4 °F to 158 °F	± 0.72 °F
			Relative Humidity	25% to 95%	± 3.5%
4 External Inputs	Hobo	U12-006	-	-	-
Carbon Dioxide External Input	Telaire	7001	Carbon Dioxide	0 - 4,000 ppm	50 ppm
Current Transformer External Input	Hobo	CTV-A	Amperage	0 - 20 A	± 4.5%
Current Transformer External Input	Hobo	CTV-C	Amperage	0 - 100 A	± 4.5%
Boiler Horsepower / BTU's / Chiller kW per Ton	GE Panametrics	PT878	Flow	-17950 to 179500 gpm	± 1.5%
			Temperature	-4 °F to 500 °F	± 0.83 °F
Multi-Phase Power	Hioki	3169-20	Voltage	0 - 600 V	± 0.2%
			Amperage	0 - 500 A	± 0.5%
Multi-Phase Power	Hioki	3169-20	Voltage	0 - 600 V	
			Amperage	0 - 500 A	
True-RMS Power	Fluke	345 or 1735	Voltage	0 - 600 V	± 0.3%
			Amperage	0 - 1400 A	± 0.3%
Combustion	Bacharach	PCA-265	Oxygen	0.1% to 20.9%	± 0.3%
			Temperature	-4 °F to 2192 °F	6 °F
			Carbon Monoxide	0 - 4,000 ppm	5%
			Nitric Oxides	1 - 3,000 ppm	5%
			Pressure	± 72 in. WC	2%

EXHIBIT D - PERFORMANCE GUARANTEE AGREEMENT

710 E. San Augustine
Deer Park, TX 77536

Conducted by:

Performance Services

801 E. Old Settlers Blvd
Suite 100
Round Rock, Texas 78664
February 27, 2024

EXHIBIT D
PERFORMANCE GUARANTEE AGREEMENT

Project: City of Deer Park Advanced Metering Infrastructure (AMI)
Energy Savings Performance Contracting
Deer Park, Texas

Qualified Provider:

Company Name: Performance Services of Texas, Inc.

Address: 801 E. Old Settlers Blvd, Suite 100

City, State, Zip: Round Rock, TX 78644

Representative: Joe Muldoon

Performance Guarantee Information:
Annual Guaranteed Water/Sewer Revenue Amount = $ 1,035,222

Program Term = 1 Year

Guarantee
Performance Services, Inc. (the "Provider") guarantees that the City of Deer Park (the "Owner") will annually save at least the amounts stated above in utility and operating costs during the stated program term.

The Performance Guarantee Agreement (the Guarantee) shall commence once the Utility Cost Reduction Measures (UCRMs) are installed, the Owner's staff has been trained how to operate the UCRMs and the UCRMs have been optimized by the Provider. The Guarantee commencement date shall be established by both the Owner and Provider by their signatures on the Guarantee Commencement Letter contained herein. The Guarantee shall be fulfilled and fully satisfied once the Guaranteed Energy and Operational Savings have equaled the Owner's payments as identified on the Amortization Schedule in the Guaranteed Energy Savings Contract (the Agreement).

UCRM 1 – Water Meters w/ AMI

Guaranteed additional water/sewer revenues generated by this UCRM shall be based upon a measurement of flow accuracies conducted approximately one year after the Substantial Completion of the installation. Substantial Completion is defined as the point in time when the owner has accepted and is utilizing the water meters provided in this contract. The one-time measurement will consist of the testing of a statistically relevant sample, as defined in Exhibit C, of the installed meters to calculate the Measured Meter Accuracy for each size of water meter. These values shall be input into "Table to be used in Determining Increased Annual Revenue" in Exhibit C. If the total annual Water/Sewer revenue increase calculated from the table is equal to or greater than the guaranteed Water/Sewer revenue increase amount shown on "Table 1C – Guaranteed Savings" in Exhibit C, these increased revenues shall be applied to the Guaranteed Utility Savings Amount throughout the term of the Guarantee. If the total calculated resultant measured revenue increase including other UCRM annual savings is less than the total guaranteed savings amount shown on the referenced table, the Provider shall pay the Owner the resultant shortfall for Year 1 of the Guarantee. If the guaranteed savings are not met, the Provider will then replace the meters that do not meet the accuracy guarantee. The Provider will confirm that the accuracy guarantee is being met in a subsequent measurement and verification report using a statistically relevant sample, as defined in Exhibit C. Measured savings/increased revenue will be calculated using the above referenced procedure. The calculated increased revenues shall be applied to the Guaranteed Utility Savings Amount throughout the duration of the Guarantee period.

Measurement and Verification

Measurement and Verification services shall be performed by the Provider as described in this Guarantee.

Other Requirements

The Owner agrees to maintain all relevant equipment / systems affecting energy efficiency such that the condition of the existing equipment / systems during the term of Guarantee is at least equal to their condition at the completion of this Contract. The Owner also agrees to properly maintain all new and existing equipment and operate all of the new and existing systems as described in the Proposal, Installation Contract and Guarantee. If the Owner fails to operate his equipment / systems as described herein and it results in reduced energy or operational savings, then actual energy or operational savings shall be adjusted to the benefit of the Provider to offset lost energy savings caused by such failures by the Owner.

City of Deer Park

By: _____

_____

Date: _____

Performance Services, Inc.

By: _____

Joe Muldoon, Vice President

Date: _____

EXHIBIT E – WATER METER TESTING DATA

710 E. San Augustine
Deer Park, TX 77536

Conducted by:

Performance Services

801 E. Old Settlers Blvd
Suite 100
Round Rock, Texas 78664
February 27, 2024

TABLE 1E: 5/8" X ¾" METER TEST DATA

Serial	Address	Lat/Lon	ULow GPM	ULow % Accuracy	Low GPM	Low % Accuracy	Mid GPM	Mid % Accuracy	High GPM	High % Accuracy
98735573	1505 Adams Dr	29.678282, -95.108558	0.11	80.00%	0.5	97.00%	3	98.00%	15	92.90%
98994837	2218 E Van Trease	29.691832, -95.107446	0.11	96.23%	0.5	77.00%	3	96.30%	15	94.65%
95702491	706 Kingsston Ct	29.678869, -95.116589	0.11	68.00%	0.5	98.00%	3	98.33%	15	95.70%
19737784	1810 Meredith Ct	29.701316, -95.104118	0.11	78.00%	0.5	96.00%	3	96.14%	15	96.12%
98087063	310 Una Dr	29.695494, -95.120270	0.11	64.00%	0.5	98.00%	3	98.33%	15	96.40%
98087144	2309 E Van Trease	29.690740, -95.107612	0.11	101.89%	0.5	100.00%	3	101.00%	15	96.44%
98471313	3417 Somerset Ln	29.680771, -95.103491	0.11	100.00%	0.5	101.00%	3	98.25%	15	96.64%
98735589	406 Strey Ct	29.670084, -95.119117	0.11	82.00%	0.5	92.00%	3	98.25%	15	97.21%
98471290	910 Martha St	29.703422, -95.115479	0.11	101.89%	0.5	100.00%	3	100.19%	15	97.43%
98994800	1614 Monroe	29.676676, -95.106815	0.11	98.00%	0.5	97.00%	3	100.33%	15	97.60%
19737761	3914 E Court St	29.676291, -95.113578	0.11	72.00%	0.5	96.00%	3	98.95%	15	97.70%
19737767	701 Alyse ST	29.706484, -95.111998	0.11	96.00%	0.5	100.00%	3	99.50%	15	97.81%
98411292	726 Purdue Ln	29.671737, -95.116074	0.11	84.00%	0.5	93.00%	3	98.25%	15	97.89%
98735599	757 Academy Ln	29.665123, -95.114194	0.11	66.00%	0.5	101.00%	3	98.95%	15	97.89%
19737766	2006 Wake Forest	29.689475, -95.142384	0.11	100.00%	0.5	101.00%	3	99.22%	15	97.93%
99214316	1506 Wesley	29.697194, -95.111096	0.11	96.00%	0.5	100.00%	3	100.00%	15	98.01%
19737798	3201 Brookdale Ct	29.682553, -95.133640	0.11	101.89%	0.5	101.00%	3	101.17%	15	98.33%
98994789	1433 N Park Ridge Dr	29.683250, -95.108903	0.11	100.00%	0.5	99.00%	3	99.22%	15	98.40%
53345173 IRR	3122 Woodlands Dr	29.683351, -95.100171	0.11	94.00%	0.5	99.00%	3	101.00%	15	98.41%
99563523	3606 Garrett Blvd	29.679274, -95.093146	0.11	2.00%	0.5	98.00%	3	100.00%	15	98.80%
99214304	1914 Lexington St	29.685913, -95.141494	0.11	101.89%	0.5	101.00%	3	100.19%	15	99.00%
97141561	1221 Princeton Ln	29.6661667, -95.11035	0.11	86.00%	0.5	92.00%	3	100.35%	15	99.17%
96521928	110 W Vaughn LN	29.688108, -95.124468	0.11	92.25%	0.5	92.00%	3	99.67%	15	99.20%
98471304	3613 Greenwood Pl	29.678519, -95.137804	0.11	94.00%	0.5	94.00%	3	94.00%	15	99.40%
99214334	3906 Brownwind Trl	29.676362, -95.096871	0.11	100.00%	0.5	100.00%	3	100.00%	15	99.40%
98994822	926 Paulette Dr	29.687467, -95.114544	0.11	86.00%	0.5	101.00%	3	100.00%	15	99.40%
97141638	2205 Limerick	29.691789, -95.127516	0.11	16.00%	0.5	98.00%	3	97.67%	15	99.50%
98471276	1509 Hoover Dr	29.687728, -95.108491	0.11	8.00%	0.5	99.00%	3	100.00%	15	99.70%
54935136	1201 DUTCH	29.701291, -95.125358	0.11	96.00%	0.5	100.00%	3	100.00%	15	100.00%
99563524	2605 Live Oak	29.675760, -95.093893	0.11	101.89%	0.5	101.00%	3	100.19%	15	100.22%
97141599	2209 Kilkenny Ln	29.691116, -95.137987	0.11	84.00%	0.5	99.31%	3	100.70%	15	100.29%
98735549	2302 Wilshire Ct	29.690750, -95.141020	0.11	88.00%	0.5	99.31%	3	98.60%	15	101.10%
95786217	3302 Park Dale Dr	29.681176, -95.110086	0.11	40.00%	0.25	100.00%	2	98.00%	15	97.50%
19778003	4217 Justin Ln	29.673502, -95.114177	0.11	0.00%	0.25	70.00%	2	78.95%	10	83.85%
19882205	314 Crete Dr	29.801183, -98.7064	0.11	0.00%	0.25	0.00%	2	77.11%	15	90.51%
18335637	1602 Byron Ave	29.697256, -95.121697	0.11	0.00%	0.25	0.00%	2	78.61%	15	91.93%
18972726	4213 Justin Ln	29.673767, -95.11419	0.11	0.00%	2	0.00%	2	0.00%	15	92.08%
91256482	2121 Plunkett St	29.680326, -95.139976	0.11	97.66%	0.25	100.00%	2	96.15%	15	92.69%
29961681	4213 Cork	29.673709, -95.120691	0.11	0.00%	2	30.00%	2	78.95%	15	94.77%
95702489	1106 Wynfield Dr	29.702048, -95.104958	0.11	0.00%	2	26.32%	2	52.63%	15	94.92%
29383742	757 Rutgers Ln	29.668483, -95.114384	0.11	0.00%	0.25	0.00%	2	91.18%	15	95.02%
24674622	1714 S Park Side dr	29.684206, -95.105594	0.11	0.00%	0.25	0.00%	2	90.00%	15	95.20%
25877482	4210 Ember Ln	29.673771, -95.119031	0.11	0.00%	2	0.00%	2	8.77%	15	95.31%
32315738	838 Elm St	29.703712, -95.124776	0.11	0.00%	0.25	1.00%	2	89.55%	15	95.31%
95702492	918 Wynfield Dr	29.703051, -95.104625	0.11	0.00%	0.25	0.00%	2	96.49%	15	95.46%
29296585	213 W Vaughn	29.688255, -95.125766	0.11	0.00%	0.25	0.00%	2	74.22%	15	95.85%
29383625	1706 Park Ave	29.696211, -95.120895	0.11	0.00%	0.25	0.00%	2	96.52%	15	96.40%
19383351	758 Amherst ln	29.671034, -95.114516	0.11	0.00%	0.25	0.00%	2	82.73%	15	97.86%
26925635	1113 Princeton Ln	29.666164, -95.112286	0.11	0.00%	0.25	0.00%	2	98.12%	15	98.01%
19778442	4901 College Park Dr	29.665502, -95.113947	0.11	0.00%	0.25	65.00%	2	99.11%	15	98.31%
97141570	3314 Park Dale Dr	29.681367, -95.109507	0.11	4.00%	0.25	99.00%	2	100.00%	15	98.59%
19737775	3806 Downing Cir	29.677563, -95.115294	0.11	12.00%	0.25	0.00%	2	98.12%	15	98.61%
25271019	726 Amherst Ln	29.671002, -95.115953	0.11	0.00%	0.25	17.00%	2	99.11%	15	98.61%
19737779	1109 Briarwood Ct	29.694427, -95.132765	0.11	100.00%	0.75	101.08%	2	98.80%	10	98.62%
26611272	4410 W Pasadena Blvd	29.681350, -95.140238	0.11	0.00%	0.25	73.00%	2	100.00%	15	98.98%
29296491	902 Alyse ST	29.704041, -95.112090	0.11	84.00%	0.25	100.97%	2	98.90%	15	99.00%
96521950	4206 Baron	29.674061, -95.121717	0.11	100.00%	0.25	100.00%	2	96.15%	15	99.08%
19140395	1013 Sharie	29.702245, -95.114482	0.11	78.00%	0.25	100.97%	2	100.90%	15	99.30%
20580439	1506 Atlanta St	29.686618, -95.13671	0.11	0.00%	0.25	2.00%	2	90.39%	15	99.43%
97141633	2709 Moss Ln	29.675994, -95.092858	0.11	96.00%	0.25	99.61%	2	99.60%	15	99.65%
27080277	1802 Park Ave	29.695402, -95.120837	0.11	0.00%	0.25	0.00%	2	88.56%	15	99.68%
96521864	3214 Brookhaven Ct	29.682174, -95.132031	0.11	74.00%	0.25	99.00%	2	100.00%	15	99.68%
20157260	4201 Glacier Ln	29.674167, -95.117044	0.11	0.00%	0.25	0.00%	2	90.19%	15	99.70%
29296904	4609 College Park Dr	29.668043, -95.114018	0.11	72.00%	0.25	88.00%	2	98.12%	15	99.70%
96521947	1421 Coolidge Dr	29.686836, -95.109321	0.11	0.00%	0.25	87.00%	2	99.50%	15	99.78%
30831030	1417 Byron Ave	29.698155, -95.121634	0.11	76.00%	0.25	100.29%	2	100.70%	15	99.99%
97141617	4014 Windsor Dr	29.675357, -95.11589	0.11	86.00%	0.25	99.31%	2	100.70%	15	100.09%
19393528	2125 Hillshire Dr	29.677860, -95.135391	0.11	0.00%	0.25	30.00%	2	96.00%	15	100.10%
90540551	917 Marlene St	29.702773, -95.11543	0.11	76.00%	0.25	100.97%	2	100.90%	15	100.10%
24339448	4213 Hastings Ln	29.67375, -95.11597	0.11	0.00%	0.25	0.00%	2	96.13%	15	100.30%
24673662	2013 Hillshire Dr	29.677879, -95.138227	0.11	0.00%	0.25	27.00%	2	98.00%	15	100.43%
24677197	821 Martha St	29.704082, -95.115448	0.11	72.00%	0.25	99.03%	2	98.90%	15	100.50%
25270964	921 Peggy St	29.703200, -95.114461	0.11	70.00%	0.25	100.97%	2	98.90%	15	100.50%
19332109	2105 Estate Dr	29.677130, -95.136616	0.11	0.00%	0.25	94.00%	2	97.00%	15	101.77%
31576269	2221 Plunkett St	29.678649, -95.139945	0.11	86.00%	0.25	98.62%	2	100.40%	15	101.84%
20899831	2121 Whatley Dr	29.680229, -95.138692	0.11	80.00%	0.25	100.00%	2	100.00%	15	101.87%
31551174	7425 Stephanie Dr	29.672589, -95.124294	0.11	0.00%	0.25	0.00%	2	0.00%	10	0.00%
30438727	7409 W Temperance	29.670907, -95.125094	0.11	0.00%	0.25	0.00%	2	0.00%	10	0.00%
30438729	7413 Valeda Dr	29.671717, -95.125012	0.11	0.00%	0.25	0.00%	2	0.00%	10	97.41%
13728578	908 Boston	29.702546, -95.126935	0.11	0.00%	0.25	0.00%	2	100.47%	10	101.67%
18678082	4230 Fleet Ln	29.673331, -95.117936	0.11	0.00%	0.25	7.00%	2	92.24%	10	97.41%
32315748	829 Cedar	29.703960, -95.126181	0.11	0.00%	0.25	11.00%	2	96.94%	10	99.63%
24676831	1725 N Park Side Dr	29.683834, -95.105402	0.11	0.00%	0.25	50.00%	2	89.17%	15	94.88%
95702549	1413 Deer Ave	29.698332, -95.118871	0.11	0.00%	0.25	80.00%	2	91.00%	15	96.47%
29296852	305 Ellen Dr	29.697965, -95.120578	0.11	0.00%	0.25	90.00%	2	96.00%	15	94.44%
			Average	46.35%	**Average**	65.51%	**Average**	90.25%	**Average**	95.50%

TABLE 2E: 5/8" X ¾" METER TESTING SUMMARY

5/8" Summary	uLow GPM	uLow % Accuracy	Low GPM	Low % Accuracy	Mid GPM	Mid % Accuracy	High GPM	High % Accuracy
Averages	0.11	46.35%	0.25	65.51%	2	90.25%	15	95.50%
Flow %		5%		10%		70%		15%
Averaged to Flow %		2.32%		6.55%		63.18%		14.32%
			Blended Average		86.37%			

TABLE 3E: 1" METER TEST DATA

Serial	Address	Lat/Lon	ULow GPM	ULow % Accuracy	Low GPM	Low % Accuracy	Mid GPM	Mid % Accuracy	High GPM	High % Accuracy
90802926	2020 Louisiana Ave	29.682552, -95.142637	0.3	0.00%	0.75	0.00%	4	0.00%	40	0.00%
52726361	3910 Penny Ln	29.674005, -95.103296	0.3	84.00%	0.75	92.00%	4	101.75%	40	80.87%
29070025	1233 Dutch St	29.700371, -95.125284	0.3	94.00%	0.75	90.00%	4	93.25%	40	93.33%
93093018	2425 Center St	29.688957, -95.123338	0.3	75.80%	0.75	95.36%	4	96.69%	16	94.82%
37153540	523 E Parktown Dr	29.679745, -95.128160	0.3	0.20%	0.75	73.10%	4	94.16%	15	95.29%
39727557	2810 Center St #8	29.686165, -95.123583	0.3	82.60%	0.75	91.55%	4	95.65%	8	95.45%
26040108	568 E Parktown Dr	29.679159, -95.126960	0.3	1.80%	0.75	74.04%	4	94.37%	15	95.85%
53345272	2702 Solitude Ln	29.672056, -95.093305	0.3	88.00%	0.75	98.33%	4	96.82%	16	96.31%
96694262	3502 Dalmation Ln	29.680364, -95.116309	0.3	96.00%	0.75	98.18%	4	97.16%	10	96.68%
54149625	1600 S BATTLEGROUND	29.697263, -95.093484	0.3	90.80%	0.75	95.27%	4	96.97%	16	97.01%
38824577	595 W Parktown Dr	29.679574, -95.129065	0.3	0.00%	0.75	74.98%	4	94.81%	15	97.02%
94331779	1902 Deervalley St	29.694882, -95.104560	0.3	66.00%	0.75	95.28%	4	96.44%	10	97.02%
DeerP-001	2801 E DENALI	29.686033, -95.106433	0.3	98.00%	0.75	101.00%	4	101.75%	40	97.13%
53604890	5018 East Meadow	29.664239, -95.102807	0.3	89.00%	0.75	97.45%	4	96.69%	7	97.30%
97442703	4909 W Pasadena Blvd	29.681919, -95.137859	0.3	86.00%	0.75	97.27%	4	96.85%	10	97.46%
95786727	2318 E Lawther Dr	29.690014, -95.109335	0.3	79.60%	0.75	94.09%	4	96.74%	12	97.54%
96694272	2122 Whatley Dr	29.680166, -95.139111	0.3	86.00%	0.75	96.46%	4	95.82%	10	97.83%
53910362	4926 East Blvd	29.665187, -95.098405	0.3	85.00%	0.75	96.82%	4	97.17%	20	98.19%
97442701	1914 Deervalley St	29.694136, -95.104658	0.3	89.00%	0.75	92.27%	4	96.06%	20	98.24%
99343970	3518 Surry Ln	29.680095, -95.104253	0.3	88.00%	0.75	97.27%	4	97.91%	18	98.26%
52918179	4212 Ashley Ln	29.674476, -95.094966	0.3	78.00%	0.75	96.53%	4	98.40%	15	98.34%
53160957	2514 Solitude LN	29.672063, -95.094605	0.3	94.00%	0.75	96.53%	4	96.19%	15	98.38%
53345303	1821 Dylan	29.674831, -95.103983	0.3	96.44%	0.75	99.07%	4	99.11%	15	98.61%
DeerP-002	2920 DOW-IRRIGATION	29.684668, -95.120623	0.3	96.00%	0.75	96.53%	4	96.97%	15	98.70%
53571397	3902 Woody Guthrie	29.674264, -95.105629	0.3	97.21%	0.75	99.07%	4	99.24%	15	98.73%
53160974	220 Deerwood Glen	29.707727, -95.143246	0.3	99.04%	0.75	99.81%	4	99.22%	15	98.84%
53345276	212 DeerWood Glen	29.707947, -95.143613	0.3	99.04%	0.75	99.63%	4	99.51%	15	98.91%
54149631	4320 EAST BLVD	29.671970, -95.098546	0.3	92.80%	0.75	94.82%	4	96.77%	16	98.93%
96694267	905 W 13th	29.700740, -95.132270	0.3	83.60%	0.75	97.04%	4	98.41%	15	98.97%
54402882	3006 E. X St	29.695212, -95.088987	0.3	96.15%	0.75	98.13%	4	99.73%	15	99.01%
54149601	3805 White Wing Ln	29.675870, -95.105503	0.3	1.00%	0.75	91.85%	4	98.70%	15	99.04%
16286069	4217 Ashley Ln	29.674238, -95.095127	0.3	72.00%	0.75	24.37%	4	97.40%	15	99.06%
53604884	1914 Jasmine	29.673547, -95.103381	0.3	97.69%	0.75	99.53%	4	97.57%	15	99.11%
97442698	2309 W Lawther Dr	29.690410, -95.110564	0.3	89.60%	0.75	95.45%	4	97.53%	10	99.44%
17114873	925 Luella Ave	29.702669, -95.113624	0.3	93.81%	0.75	100.28%	4	100.07%	8	99.96%
16131896	3029 Louisiana	29.682006, -95.142553	0.3	25.40%	0.75	93.06%	4	99.70%	15	100.00%
19762445	3001 Luella Ave	29.684263, -95.113096	0.3	100.79%	0.75	100.28%	4	100.69%	11	101.51%
96694268	306 Dow Cir	29.682322, -95.119955	0.3	40.00%	0.75	96.00%	4	99.98%	15	96.60%
53345274	4440 HWY 225	29.709269, -95.142424	0.3	75.80%	0.75	95.56%	4	99.01%	26	97.84%
98588468	4001 Center St A	29.675696, -95.123026	0.3	78.00%	0.75	94.00%	3	98.47%	7.5	97.24%
97442695	205 Center St	29.708887, -95.123595	0.3	83.40%	0.75	96.60%	5	99.50%	10	98.00%
19762444	444 W Pasadena Blvd	29.67984, -95.12657	0.3	90.00%	0.75	96.00%	4	98.35%	15	97.94%
14413594	2142 Longwood Dr	29.682948, -95.101432	0.3	93.50%	0.75	97.00%	4	98.85%	15	99.40%
			Average	75.65%	**Average**	90.88%	**Average**	95.50%	**Average**	95.21%

TABLE 4E: 1" METER TESTING SUMMARY

1" Summary	uLow GPM	uLow % Accuracy	Low GPM	Low % Accuracy	Mid GPM	Mid % Accuracy	High GPM	High % Accuracy
Averages	0.25	75.65%	0.75	90.88%	4	95.50%	15	95.21%
Flow %		5%		10%		70%		15%
Averaged to Flow %		3.78%		9.09%		66.85%		14.28%
			Blended Average		94.00%			

TABLE 5E: 1.5" METER TEST DATA

Serial	Address	Lat/Lon	ULow GPM	ULow % Accuracy	Low GPM	Low % Accuracy	Mid GPM	Mid % Accuracy	High GPM	High % Accuracy
10804652 irr	8055 SPENCER	29.664034, -95.115058	0.25	100.00%	1.5	97.56%	6	95.54%	12	91.67%
61064430	317 W San Augustine St	29.690067, -95.126362	0.25	0.00%	1.5	98.04%	8	95.35%	12	97.88%
9217112	4013 Center St	29.675071, -95.123066	0.25	92.25%	1.5	94.48%	6	77.14%	12	98.18%
54081577	3321 Center St	29.681179, -95.123170	0.25	100.00%	1.5	97.09%	6	98.20%	15	99.08%
43182765	4420 UNDERWOOD	29.671007, -95.087411	0.25	79.52%	1.5	98.96%	5	99.18%	9	99.38%
60771867	4424 UNDERWOOD	29.670875, -95.087374	0.25	78.13%	1.5	99.41%	5	98.52%	9	99.67%
61064432	609 CENTER ST	29.706108, -95.123766	0.25	60.00%	1.5	95.83%	8	98.72%	15	99.85%
98820670	5001 College Park	29.664497, -95.113938	0.25	80.00%	1.5	99.85%	8	99.50%	12	99.95%
54091580	105 W San Augustine	29.689982, -95.124079	0.25	77.97%	1.5	99.80%	6	99.71%	12	100.43%
98820667	906 W 13th St	29.701128, -95.132177	0.25	59.76%	1.5	100.62%	8	100.64%	23	100.86%
35751045	4428 UNDERWOOD	29.669915, -95.087338	0.25	78.28%	1.5	98.91%	8	101.54%	28	101.00%
95623620	1717 W 13th St	29.700697, -95.138578	0.25	20.00%	1.5	100.96%	8	101.33%	28	101.01%
98820666	3002 E X St	29.695191, -95.089484	0.25	39.14%	1.5	98.87%	8	99.74%	26	101.09%
19236666	1904 Cente St	29.694213, -95.124145	0.25	0.00%	1.5	101.11%	8	101.57%	20	101.31%
360871862	1801 S BATTLEGROUND	29.695390, -95.091470	0.25	2.00%	1.5	91.81%	6	96.87%	12	99.00%
			Average	57.80%	Average	98.22%	Average	97.57%	Average	99.36%

TABLE 6E: 1.5" METER TESTING SUMMARY

1.5" Summary	uLow GPM	uLow % Accuracy	Low GPM	Low % Accuracy	Mid GPM	Mid % Accuracy	High GPM	High % Accuracy
Averages	0.25	57.80%	1.5	98.22%	8	97.57%	15	99.36%
Flow %		5%		10%		70%		15%
Averaged to Flow %		2.89%		9.82%		68.30%		14.90%
			Blended Average		95.91%			

TABLE 7E: 2" METER TEST DATA

Serial	Address	Lat/Lon	ULow GPM	ULow % Accuracy	Low GPM	Low % Accuracy	Mid GPM	Mid % Accuracy	High GPM	High % Accuracy
60988811	3601 CENTER	29.679143, -95.121570	0.25	0.00%	2	99.65%	15	98.38%	100	99.67%
61073068	5010 W Pasadena Blvd	29.678408, -95.136852	0.25	0.00%	2	88.64%	15	97.06%	100	97.30%
60974054 irr	306 Deerwood Glen	29.705688, -95.142186	0.25	0.00%	2	92.67%	15	97.06%	100	97.30%
61096156	402 Deerwood Glen	29.701644, -95.142234	0.25	66.00%	2	98.50%	12	99.53%	25	97.44%
98377339	1210 E 13st	29.700228, -95.111561	0.25	66.45%	2	99.09%	8	101.43%	13	97.93%
61140808	2401 EAST BLVD	29.700069, -95.099803	0.25	0.00%	2	96.70%	15	98.39%	100	97.94%
61016874	2500 E 13TH ST	29.700206, -95.096891	0.25	0.00%	2	99.65%	15	99.71%	100	98.33%
42094136	1314 E 13st	29.700031, -95.109664	0.25	58.00%	2	99.10%	8	98.77%	18	98.76%
60882564	220 Deerwood Glen	29.707479, -95.1437077	0.25	80.00%	2	99.55%	5	99.76%	18	98.78%
95799572	1401 Center St	29.698593, -95.122794	0.25	80.00%	2	99.35%	8	99.57%	25	98.96%
61064386	1101 East Blvd	29.702320, -95.101275	0.25	80.00%	2	99.75%	9	99.12%	20	98.97%
60990142	1800 W 13th St	29.701894, -95.141589	0.25	60.00%	2	99.70%	8	99.47%	25	99.03%
60936069	8055 SPENCER	29.663885, -95.1147544	0.25	95.06%	2	96.63%	8	100.40%	15	99.10%
94291559	1102 Howard Dr	29.707061, -95.132774	0.25	20.00%	2	99.35%	7	99.87%	15	99.29%
60935071	4460 Hwy 225	29.71026, -95.142024	0.25	49.75%	2	99.41%	7	101.34%	20	99.69%
60954921	2801 P St	29.685971, -95.091844	0.25	78.28%	2	99.60%	8	100.97%	11	99.75%
61016876	4320 EAST BLVD	29.671651, -95.098989	0.25	80.00%	2	99.76%	8	99.01%	20	99.76%
60990147	1301 W 13th ST	29.699527, -95.135853	0.25	60.00%	2	99.80%	8	99.98%	15	99.84%
60882561	4440 HWY 225	29.7089188, -95.1430815	0.25	79.68%	2	99.53%	8	99.80%	20	99.87%
60882562	212 Deerwood Glen	29.7081102, -95.1437343	0.25	79.52%	2	99.50%	5	100.87%	20	99.90%
61064381	4600 Underwood Rd	29.667313, -95.088573	0.25	80.00%	2	99.35%	8	99.56%	25	99.92%
26100798	715 Center St	29.705159, -95.123201	0.25	0.00%	2	95.00%	5	97.14%	25	100.00%
1359999	3501 East Blvd	29.680035, -95.097912	0.25	82.00%	2	99.62%	5	101.14%	25	100.17%
42094137	4709 Center	29.666218, -95.122739	0.25	10.00%	2	100.00%	4	99.83%	8	100.67%
98377338	1246Underwood A	29.6973858, -95.0883718	0.25	80.00%	2	99.45%	7	100.73%	15	100.71%
60988814	314 Deerwood Glen	29.705341, -95.142813	0.25	80.00%	2	99.85%	5	99.72%	25	100.83%
98819649	2909 Aaron St	29.675082, -95.089027	0.25	95.24%	2	101.11%	5	100.35%	25	100.95%
61073064	320 Deerwood Glen	29.704574, -95.142819	0.25	0.00%	2	99.75%	5	99.30%	25	100.98%
99819648	2306 S Battleground	29.6908843, -95.0903395	0.25	80.00%	2	98.96%	5	101.37%	25	101.00%
91460278	1109 Howard Dr	29.708469, -95.13142	0.25	80.00%	2	99.55%	7	98.90%	12	101.29%
			Average	54.00%	**Average**	98.62%	**Average**	99.62%	**Average**	99.47%

TABLE 8E: 2" METER TESTING SUMMARY

2" Summary	uLow GPM	uLow % Accuracy	Low GPM	Low % Accuracy	Mid GPM	Mid % Accuracy	High GPM	High % Accuracy
Averages	0.25	54.00%	2	98.62%	8	99.62%	25	99.47%
Flow %		5%		10%		70%		15%
Averaged to Flow %		2.70%		9.86%		69.73%		14.92%
			Blended Average		97.21%			

TABLE 9E: 3" METER TEST DATA

Serial	Address	Lat/Lon	ULow GPM	ULow % Accuracy	Low GPM	Low % Accuracy	Mid GPM	Mid % Accuracy	High GPM	High % Accuracy
70340944 H/L	7201 B SPENCER HWY	29.665501, -95.128423	0.5	91.22%	2	92.81%	30	90.03%	250	95.10%
9600918	1515 W 13th St	29.700665, -95.137658	0.5	100.00%	8	99.88%	30	96.56%	60	96.89%
23909003	2920 Luella Ave	29.685235, -95.113476	0.5	0.00%	2	79.68%	30	96.00%	80	98.00%
9505020	200 E San Augustine St	29.689489, -95.121864	0.5	39.84%	8	86.91%	30	98.74%	40	98.23%
98518614	501 E 2nd St	29.709250, -95.118597	0.5	89.91%	8	99.99%	8	99.70%	15	98.86%
16218338	DURANT BALL FIELDS	29.669777, -95.127321	0.5	72.33%	8	100.69%	15	97.95%	30	99.84%
1020118032	950 E Pasadena Blvd	29.679131, -95.113265	0.5	0.00%	8	95.00%	30	100.12%	60	97.50%
9403814	1601 Georgia Ave	29.696259, -95.134966	0.5	50.00%	8	94.62%	15	98.80%	30	100.43%
70400024	1155 Indpendence Pkwy	29.719008, -95.091426	0.5	95.00%	2	88.15%	30	99.25%	200	98.71%
			Average	59.81%	**Average**	93.08%	**Average**	97.46%	**Average**	98.17%

TABLE 10E: 3" METER TESTING SUMMARY

3" Summary	uLow GPM	uLow % Accuracy	Low GPM	Low % Accuracy	Mid GPM	Mid % Accuracy	High GPM	High % Accuracy
Averages	0.5	59.81%	8	93.08%	30	97.46%	75	98.17%
Flow %		5%		10%		70%		15%
Averaged to Flow %		2.99%		9.31%		68.22%		14.73%
			Blended Average		95.25%			

TABLE 11E: 4" METER TEST DATA

Serial	Address	Lat/Lon	ULow GPM	ULow % Accuracy	Low GPM	Low % Accuracy	Mid GPM	Mid % Accuracy	High GPM	High % Accuracy
70274338	402 Ivy	29.709186, -95.119831	0.75	98.01%	2	101.69%	50	31.47%	250	1.30%
1548165454	5002 W Pasadena Blvd	29.678350, -95.136752	0.75	101.76%	2	100.20%	50	97.73%	350	96.53%
70234878	2800 Texas Ave	29.684196, -95.129485	0.75	99.00%	2	98.30%	50	97.84%	350	96.57%
28517799	4315 Luella Ave	29.672895, -95.112916	0.75	79.84%	2	84.79%	30	89.36%	60	97.53%
1586920	201 McDermott St	29.682093, -95.124656	0.75	100.00%	2	99.85%	50	100.65%	350	99.39%
9403814	1601 Georgia Ave	29.696259, -95.134966	0.75	0.00%	8	100.00%	13	100.00%	28	101.00%
70355780	3701 Center St	29.676509, -95.122986	0.75	0.00%	15	96.67%	25	96.00%	50	98.69%
			Average	68.37%	Average	97.36%	Average	87.58%	Average	84.43%

TABLE 12E: 4" METER TESTING SUMMARY

4" Summary	uLow GPM	uLow % Accuracy	Low GPM	Low % Accuracy	Mid GPM	Mid % Accuracy	High GPM	High % Accuracy
Averages	0.75	68.37%	8	97.36%	50	87.58%	350	84.43%
Flow %		5%		10%		70%		15%
Averaged to Flow %		3.42%		9.74%		61.31%		12.66%
			Blended Average		87.12%			

TABLE 13E: 6" METER TEST DATA

Serial	Address	Lat/Lon	ULow GPM	ULow % Accuracy	Low GPM	Low % Accuracy	Mid GPM	Mid % Accuracy	High GPM	High % Accuracy
25166625	5010 W Pasadena Blvd	29.681823, -95.133609	2	94.34%	4	89.89%	75	97.30%	350	21.00%
NEW REGIS no#	4414 Durant Ave	29.670244, -95.127564	2	98.04%	15	97.67%	35	98.34%	70	97.29%
72047091	401 W Pasadena Blvd	29.680781, -95.126970	2	99.30%	4	98.97%	25	98.01%	50	97.46%
2022151206	710 W San Augustine	29.688926, -95.131113					50	90.00%	100	100.00%
9052709	202 Deerwood Glen	29.707101, -95.143487	2	96.00%	4	0.96	50	96.10%	200	99.13%
1155324	401 McDermott St	29.682112, -95.127450	2	0.00%	15	0.997	35	92.94%	70	101.91%
			Average	77.54%	Average	96.45%	Average	96.54%	Average	83.36%

TABLE 14E: 6" METER TESTING SUMMARY

6" Summary	uLow GPM	uLow % Accuracy	Low GPM	Low % Accuracy	Mid GPM	Mid % Accuracy	High GPM	High % Accuracy
Averages	2	77.54%	15	96.45%	50	96.54%	350	83.36%
Flow %		5%		10%		70%		15%
Averaged to Flow %		3.88%		9.64%		67.58%		12.50%
			Blended Average		93.60%			

TABLE 15E: 8” METER TEST DATA

Serial	Address	Lat/Lon	ULow GPM	ULow % Accuracy	Low GPM	Low % Accuracy	Mid GPM	Mid % Accuracy	High GPM	High % Accuracy
246024602	4602 Durant	29.668631, -95.125781	4	94.76%	50	97.63%	150	97.44%	350	99.70%
70431223	800 E Pasadena Blvd	29.681748, -95.131025	4	100.00%	2	99.60%	125	99.77%	200	101.74%
			Average	97.38%	**Average**	98.62%	**Average**	98.61%	**Average**	100.72%

TABLE 16E: 8” METER TESTING SUMMARY

8" Summary	uLow GPM	uLow % Accuracy	Low GPM	Low % Accuracy	Mid GPM	Mid % Accuracy	High GPM	High % Accuracy
Averages	4	97.38%	50	98.62%	150	98.61%	350	100.72%
Flow %		5%		10%		70%		15%
Averaged to Flow %		4.87%		9.86%		69.02%		15.11%
			Blended Average		98.86%			

TABLE 17E: ALL METERS ACCURACY SUMMARY

Meter Size	Accuracy
5/8"	86.37%
1"	94.00%
1.5"	95.91%
2"	97.21%
3"	95.25%
4"	87.12%
6"	93.60%
8"	98.86%