



Yucaipa Valley Water District

Notice and Agenda of a Board Workshop

Tuesday, August 29, 2017 at 4:00 p.m.

MEETING LOCATION: District Administration Building
12770 Second Street, Yucaipa

MEMBERS OF THE BOARD: Director Chris Mann, Division 1
Director Bruce Granlund, Division 2
Director Jay Bogh, Division 3
Director Lonni Granlund, Division 4
Director Tom Shalhoub, Division 5

- I. **Call to Order**
- II. **Public Comments** At this time, members of the public may address the Board of Directors on matters within its jurisdiction; however, no action or significant discussion may take place on any item not on the meeting agenda.
- III. **Staff Report**
- IV. **Operational Updates**
 - A. Proposed Imported Water Purchases from the San Bernardino Valley Municipal Water District and the San Geronio Pass Water Agency for Calendar Year 2018 [[Workshop Memorandum No. 17-122 - Page 5 of 91](#)]
 - B. Proposed Purchase of a 2017 CAT 450F Backhoe [[Workshop Memorandum No. 17-123 - Page 7 of 91](#)]
 - C. Consideration of a Trial Replacement of Ultrafiltration Membranes Filters at the Wochholz Regional Water Recycling Facility [[Workshop Memorandum No. 17-124 - Page 12 of 91](#)]
 - D. Review of Updated Standard Specifications for Drinking Water, Recycled Water, and Sewer Facilities [[Workshop Memorandum No. 17-125 - Page 28 of 91](#)]
 - E. Project Status Update for the Slope Repair at Drinking Water Reservoir R-15.1 [[Workshop Memorandum No. 17-126 - Page 29 of 91](#)]
 - F. Project Status Update for the Power Supply and Road Improvements at Drinking Water Reservoir R-18.4 [[Workshop Memorandum No. 17-127 - Page 33 of 91](#)]

Any person who requires accommodation to participate in this meeting should contact the District office at (909) 797-5117, at least 48 hours prior to the meeting to request a disability-related modification or accommodation.

Materials that are provided to the Board of Directors after the meeting packet is compiled and distributed will be made available for public review during normal business hours at the District office located at 12770 Second Street, Yucaipa. Meeting materials are also available on the District's website at www.yvwd.dst.ca.us

V. Policy Issues

- A. Overview of Current Water Meter Installation Fees and Options Related to Amend the Fee Structure to Achieve Full Cost Recovery [[Workshop Memorandum No. 17-128 - Page 39 of 91](#)]

VI. Development Related Issues

- A. Overview of the Proposed Summerwind Development, Calimesa [[Workshop Memorandum No. 17-129 - Page 44 of 91](#)]

VII. Administrative Issues

- A. Notice of Completion for the Construction of Replacement Pipelines on Date Avenue, Dodd Street, Panorama Drive, Lennox Street, Verona Street, Calvin Street, and Vista Lane - Yucaipa [[Workshop Memorandum No. 17-130 - Page 47 of 91](#)]
- B. Review of an Advanced Metering Infrastructure (AMI) Agreement Between Yucaipa Valley Water District and Sensus USA [[Workshop Memorandum No. 17-131 - Page 52 of 91](#)]
- C. Overview of a Disposal Plan for Surplus Vehicles and Equipment [[Workshop Memorandum No. 17-132 - Page 74 of 91](#)]

VIII. Director Comments**IX. Closed Session**

- A. Conference with Legal Counsel Existing Litigation Government Code, Section 54956.9(d) - Robinson Ranch vs Yucaipa Valley Water District; San Bernardino Superior Court Case No. CIVDS 1712116
- B. Conference with Real Property Negotiator(s)
Conference with Real Property negotiator(s) (Government Code 54956.8)
Property: Assessor's Parcel Number: 301-201-20
Agency Negotiator: Joseph Zoba, General Manager
Negotiating Parties: Abraham Issa
Under Negotiation: Terms of Payment and Price
- C. Conference with Real Property Negotiator(s)
Property: Assessor's Parcel Numbers: 0301-211-020 and 0301-201-030
Agency Negotiator: Joseph Zoba, General Manager
Negotiating Parties: Mesa Verde Ventures LLC c/o Betek Corporation Under Negotiation: Terms of Payment and Price
- D. Conference with Labor Negotiator (Government Code 54957.6)
District Negotiator: Joseph Zoba, General Manager, and Allison Edmisten, Chief Financial Officer
Employee Organization: IBEW Local Union 1436-YVWD Employees Association

X. Adjournment

Staff Report



Yucaipa Valley Water District

Operational Updates



Yucaipa Valley Water District



Date: August 29, 2017
From: Joseph Zoba, General Manager
Subject: Proposed Imported Water Purchases from the San Bernardino Valley Municipal Water District and the San Gorgonio Pass Water Agency for Calendar Year 2018

On November 18, 2002, the San Bernardino Valley Municipal Water District adopted Resolution No. 888 which describes the rules, regulations, and rates for the sale and delivery of supplemental water. The adopted water rates consist of a \$108/AF energy charge and a \$40/AF conveyance charge for a total base price of \$148/AF. The following chart illustrates the discounts and surcharges that apply to water purchases.

	Criteria	Payment Method	Discount / Surcharge	Water Rate
Tier I Plan Ahead	Water ordered prior to December 31 st for delivery in the following calendar year.	Option 1 - Payment for 1/12 th of the water ordered due at the end of each month for the base price.	0% Discount of base water rate	\$148/AF
		Option 2 - Payment in full by January 31 st for discounted rate.	15% Discount of base water rate	\$125.80/AF
Tier II Seasonal Storage	Water ordered for groundwater recharge prior to December 31 st for delivery during January through May of the following year.	Option 1 - Payment for 1/5 th of the water is due at the end of each Tier II month for the base price.	0% Discount of base water rate	\$148/AF
		Option 2 - Payment in full by January 31 st for discounted rate.	20% Discount of base water rate	\$118.40/AF
Tier III Spot Market Purchase	Water ordered at any time during the calendar year for delivery in the same calendar year.	Payment method pursuant to Section 4.07 of the Rules and Regulations.	25% Surcharge of base water rate	\$185/AF
Outside Water Rates	Water purchased from SBVMWD for use outside of the boundary of SBVMWD.	Payment method pursuant to Section 4.07 of the Rules and Regulations. Rate based on DWR Bulletin 132 Appendix B.	--	\$378.89/AF

Overall, SBVMWD offers very competitive water rates for planning ahead and paying for the requested water delivery within the first month of the year. However, there is no guarantee with respect to receiving water ordered and paid for at the beginning of the year. It is possible that operational issues with the State Water Project and/or lack of rainfall in northern California can result in less water being delivered than paid for by the Yucaipa Valley Water District.

Anticipated Water Delivery for 2018- San Bernardino Valley Municipal Water District

For Calendar Year 2017, the Yucaipa Valley Water District placed two orders for imported water from San Bernardino Valley Municipal Water District:

- On July 20, 2016, the Board authorized the District staff to purchase 6,000 acre-feet of imported water for direct delivery to the Yucaipa Valley Regional Water Filtration Facility [Director Memorandum No. 16-071].
- On March 7, 2017, the Board authorized the District staff to purchase an additional 1,000 acre-feet of imported water for direct delivery to the Yucaipa Valley Regional Water Filtration Facility plus 6,000 acre-feet for recharge at the Wilson Creek Spreading Basins [Director Memorandum No. 17-021].

Based on the quantity of imported water ordered last year, the District staff recommends the purchase of 7,000 acre-feet for direct delivery to the Yucaipa Valley Regional Water Filtration Facility for Calendar Year 2018. At the current rate of \$125.80 per acre foot, the total cost of the imported water from the San Bernardino Valley Municipal Water District will be \$880,600 [GL Account #02-10315].

Anticipated Water Delivery for 2018 - San Gorgonio Pass Water Agency

The Yucaipa Valley Water District will submit an order for 700 acre-feet of imported water from the San Gorgonio Pass Water Agency for direct delivery to the Yucaipa Valley Regional Water Filtration Facility. Based on the policies of the San Gorgonio Pass Water Agency, the District staff is confident that the total amount of imported water needed for direct delivery and consumption in Calimesa will be delivered by the San Gorgonio Pass Water Agency.

At the current rate of \$309 per acre foot, the total cost of the imported water from the San Gorgonio Pass Water Agency will be \$216,300 [GL Account #02-10316].

Yucaipa Valley Water District Wholesale Water Service to Western Heights Mutual Water Co.

The Yucaipa Valley Water District processes imported water at the Yucaipa Valley Regional Water Filtration Facility for the Western Heights Mutual Water Company. Western Heights Mutual Water Company has indicated that they will likely request less water in Calendar Year 2018. Once the imported water order is received, the quantity of water ordered by Western Heights Mutual Water Company will be included in the District's imported water purchase with San Bernardino Valley Municipal Water District but tracked separate from the District's order for accounting purposes.

Changing Conditions and Uncertainty

The proposed water orders identified above are projections and maximum quantities expected to be ordered based on current summer demands and a variety of other issues. If additional imported water is needed or made available, a separate memorandum will be presented for your consideration.



Date: August 29, 2017
From: John Wrobel, Public Works Manager
Subject: Proposed Purchase of a 2017 CAT 450F Backhoe

The District staff continuously reviews the operating condition, cost, and maintenance requirements of fleet vehicles and equipment to evaluate the overall maintenance and replacement needs. During the latest review, the District staff identified the need to replace the 1989 CAT 426 backhoe (unit 260). The Public Works Department uses backhoes for routine maintenance and repairs of the drinking water, recycled water, and sewer facilities.



The District staff compared both John Deere and CAT models of backhoes. Following the review, the District staff concluded that the CAT 450F backhoe was the most suitable and economical replacement. The CAT 450F is larger and more powerful than our existing unit, and Tier 4 smog compliant without adding Diesel Exhaust Fluid (DEF). The CAT 450F can be purchased for a sum not to exceed \$154,000.

Financial Consideration:

Funding for this equipment will be equally divided between Depreciation Reserves of the Water Division [GL Account #02-10310], Sewer Division [GL Account #03-10310], and the Recycled Water Division [GL Account #04-10310].





Quote 121655-01

August 9, 2017

YUCAIPA VALLEY WATER DISTRICT
PO BOX 730
YUCAIPA
California
92399-0730



Attention: JAMIE CANSLER

Dear Sir,

We would like to thank you for your interest in our company and our products, and are pleased to quote the following for your consideration.

CATERPILLAR INC. Model: 450F Backhoe Loader

STOCK NUMBER: NS0008023

SERIAL NUMBER: 0HJR00643

YEAR: 2017

We wish to thank you for the opportunity of quoting on your equipment needs. This quotation is valid for 30 days, after which time we reserve the right to re-quote. If there are any questions, please do not hesitate to contact me.

Sincerely,

Jose Farias
Machine Sales Representative

Quinn Group**CATERPILLAR INC. Model: 450F Backhoe Loader****STANDARD EQUIPMENT****BOOMS, STICKS AND LINKAGES**

17'3" center pivot backhoe	198-degree bucket rotation
Excavator style boom with hammer rest	Single Tilt (ST) Loader
Thumb-ready stick w/gripping edges	Bucket level indicator
Boom transport lock w/auto latching	Loader service brace
Swing transport lock	Return-to-dig, automatic
Lifting eye	Self-leveling loader bucket
Pilot operated stabilizer controls	Transmission neutralizer switch

POWERTRAIN

Cat C4.4 106kW Engine	outboard disk brakes
U.S. EPA T4i EMISSIONS COMPLIANT	Electronic differential lock
Electronic, turbo, aftercooled with Diesel Particulate Filter	Separate driveline parking brakes
Water separator with indicator light	Torque converter
Thermal starting aid system	Transmission, Auto-shift (5F, 3R)
Dry-type axial seal air cleaner w/auto dust ejection, pre-cleaner and filter indicator	25 mph/40 kph level ground max speed
Engine fan guard	Spin-on eng and trans oil filters
On-the-go 4-wheel drive front axle	Spin-on clear bowl water/fuel separator
Front driveshaft guard	Spin-on secondary fuel filter
Power steering, w/secondary steering	Firestone 15-19.5 12 ply front tires
Hydraulically applied multi-plate wet	Firestone 21L-24 16 ply rear tires
	Consolidated engine service points
	Open-Circuit-Breather system
	Diesel particulate filter

HYDRAULICS

Load sensing, variable flow closed center system, 50 gpm	Snap-To-Connect hydraulic couplings
5 Function backhoe hydraulics	Caterpillar XT-3 hose
6-micron spin-on hydraulic filter	Cat "ToughGuard" XT-3 ES hose
O-ring face seal hydraulic fittings	Ride Control

ELECTRICAL

12-volt electrical system	Stop and taillights
150-ampere alternator	Audible system fault alarm
Horn and Backup Alarm	Key start/stop system
Hazard flashers/turn signals	Ext/int 12-volt power receptacles (2)
Halogen head lights (4)	Two 880 CCA service-free batteries
Halogen rear flood lights (4)	Battery disconnect switch

OPERATOR ENVIRONMENT

Lighted gauge group: tachometer, fuel, service hour meter,	Cell phone mount Backhoe position foot rests
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Quinn Group

Quote 121

coolant temp, transmission temp
Interior rearview mirror
Rear fender extensions
ROPS canopy
2-inch retractable seat belt
Steering wheel assist knob
Hand and foot governor
Floor mat, coat hook

Two lockable storage areas
Drink and lunch box holders
Air suspension seat with arm rests
Service harness
Tilt steering column
Rear fender extensions
System fault alarm

OTHER STANDARD EQUIPMENT

Hydrostatic power steering
Toolbox, lockable, external
Vandalism locks and lockable hood
Transport tie-down points
Ground line fill, 44 gal fuel tank
Rubber impact strips on radiator guard
2200 lb counterweight

Tire valve stem protection
Stabilizer cylinder rock guards
Flip style, dual-purpose stabilizer pads
CD-ROM Parts and Backhoe Safety Manuals
Operations and Maintenance Manual
Long life coolant, -30C (-20F)

Quinn Group

Quote 121655-01

MACHINE SPECIFICATIONS

Description	Reference No
450F BHL, TIER 4I HRC	385-6570
STICK, EXTENDIBLE	387-8235
BUCKET, HOE, (NONE)	326-7717
CONTROLS, PILOT, 6 FUNCTION	385-6578
E-STICK TRANSPORT GROUP	374-7863
HYDRAULICS, LOADER, MP, PILOT	387-1575
CANOPY, ROPS	387-1581
SEAT BELT, 3" SUSPENSION	206-1748
SERIALIZED TECHNICAL MEDIA KIT	421-8926
STOPS, BUCKET	303-4603
LINES, COMB AUX, E-STCK, PILOT	387-1587
PACK, ROLL ON/ROLL OFF BY SEA	0G-3274
RUST PREVENTATIVE APPLICATOR	462-1033
BEACON, MAGNETIC MOUNT	211-4292
BUCKET-MP, 1.4 CYD, W/ BOCE	232-2686
BUCKET-HD, 36", 15.5 CFT	275-4026
BUCKET-HD, 24", 9.5 CFT	278-4487
BUCKET-HD, 18", 6.3 CFT	278-4499
QUICK COUPLER, MAN. PIN PULLER	303-9515
MOUNTING GP-BUCKET	322-0190
WHEEL, 18", 1/2 PL	517-7003

Sell Price	\$150,973.09
Net Balance Due	\$150,973.09
CA SALES TAX (7.75%)	\$11,700.41
After Tax Balance	\$162,673.51

TRADE-IN: CAT 426 SN# 7BC03220 (as inspected) (\$9,000.00)

TOTAL DUE: \$153,673.51

WARRANTY

Standard Warranty:	12 Months Full Machine
Extended Powertrain & Hydraulic Warranty	36 Months / 3000 Hours

F.O.B./TERMS

Riverside Machine

FINANCING

Two Payments- 1st payment of 50% upon delivery, 2nd payment of 50% due at Yucaipa Valley Water District next fiscal year.

Accepted by _____ on _____

Signature

** GMP17USA: Governmental Discount has been applied



Date: August 29, 2017

From: Joseph Zoba, General Manager

Subject: Consideration of a Trial Replacement of Ultrafiltration Membranes Filters at the Wochholz Regional Water Recycling Facility

The Yucaipa Valley Water District is analyzing the potential replacement of microfiltration membranes at the Wochholz Regional Water Recycling Facility. Based on an initial review by Separation Processes, the District staff is evaluating the benefits of testing Scinor membranes to gain additional treatment with an ultrafiltration membrane versus the existing microfiltration membrane.

A discussion about the membranes will be provided at the board workshop.



Separation Processes, Inc.
3156 Lionshead Ave., Suite #2
Carlsbad, CA 92010
Tel: 760-400-3660
Fax: 760-400-3661
www.spi-engineering.com

August 18, 2017

Mr. Joe Zoba
General Manager
Yucaipa Valley Water District
12770 Second Street
Yucaipa, CA 92399

Subject: Scinor Membrane Replacement at Wochholz

Dear Mr. Zoba:

As we discussed, the Pall membranes which have been in service for 9 years are approaching the end of their useful life. Staff has experienced significant fiber breaks as a result of the process turbidity upset that occurred last winter. Fiber breaks compromise water quality and can result in fouling of the RO system if excessive. While the performance of the Pall membrane has exceeded its projected life of 8 years, there are alternatives that should be considered.

Attached is the proposal from Scinor that we discussed yesterday. The Scinor SMT600-P50 is being proposed for replacement of the Pall membrane at the Wochholz facility. The difference in the membrane is that it has the ability to remove virus (greater than 4 log). In the current regulatory environment, the State of California requires groundwater recharge (IPR) facilities to obtain 12-10-10 log removal for virus, Giardia, and Cryptosporidium. This requirement became effective in 2014, and will apply to the Wochholz facility when recycled water is used for recharge. The Pall MF membrane has limited ability to remove virus and traditionally virus removal credit has not been provided.

The Scinor UF module itself has been out for a couple of years. It is a direct replacement for the Pall MF module in the system, and no modifications to the system are required. It was designed for that intent. SPI has evaluated the membrane for drinking water use in the State of Texas, which was approved, and performed a 1 year study at West Basin on a universal type membrane system. We have also evaluated another Scinor product for retrofit in a submerged system and are in the process of replacing 2,496 membranes at the location with the Scinor product. We have a similar membrane approved and scheduled for installation at a new facility under construction for the Monterey Regional Water Pollution Control Authority.

SPI requested the proposal from Scinor and requested that it be structured as a replacement set for evaluation, and purchase of the remaining set within a year. The arrangement works well in order for us to evaluate the membrane for use and coordinate the change with the State.

August 18, 2017
Mr. Joe Zoba
Subject: Scinor Membrane Replacement at Wochholz
Page 2



Given the option, we believe that is a better option for the District, and I would like to proceed along a path to obtain virus removal credits for the UF membrane. In looking at other testing information, the State has indicated that it may consider awarding credits based upon the 10th percentile of data that can be demonstrated. I would like to be able to demonstrate the removal, in order to obtain the removal credit. I think we can be awarded at least 2 log credit, based on criteria provided in the drinking water regulations. It may take a site demonstration in order to obtain virus removal credit and obtain the removal credit from the State.

As always SPI looks forward to working with the District and providing Engineering and Operational Support Services for the Yucaipa Valley Water District

Sincerely,

James C. Vickers

James C. Vickers, P.E.
Vice President



Ultrafiltration Module Quote

Yucaipa Valley Water District

June 7, 2017

cin

Scinor Water America, LLC

1440 Broadway, 23rd Floor
New York, NY 10018
800.774.1385

info@scinor.com | scinor.com





Scinor Water America, LLC
1440 Broadway, 23rd Floor
New York, NY 10018
800.774.1385
www.scinor.com

Mr. Jim Vickers
Separation Processes, Inc.
3156 Lionshead Avenue #2
Carlsbad, CA 92010

June 7, 2017

**RE: Yucaipa Valley Water District
Membrane Replacement Project**

Dear Jim,

Thank you for considering Scinor for this important project. Below you will find the information that you have requested.

Our solution is simple: a true direct replacement of the current installed modules without the need for changes to operating protocol, cleaning regime or special hardware. As discussed, Scinor has executed many successful retrofit projects using this simple yet effective approach. The combination of our experience and the understanding of your facility will ensure a successful execution.

Please feel free to contact me with any questions or clarifications you may require.

Sincerely,

Tom Poschmann

Scinor Water America, LLC
Tom Poschmann

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Scinor Water America, LLC
1440 Broadway, 23rd Floor
New York, NY 10018
800.774.1385
www.scinor.com

Company Introduction

The Scinor group of companies (Scinor Water Limited) is a global supplier of hollow fiber membranes, modules, systems and plants used for water treatment applications for industrial and potable water applications. Founded in 2009, Scinor has its roots in this market going back to 1993. Our proprietary hollow fiber filter membranes are made from Polyvinylidene Fluoride (PVDF) using the Thermally Induced Phase Separation (TIPS) method of manufacture. We construct filter modules using our membranes in our own proprietary designs and in configurations that directly replace most products supplied by major manufacturers of hollow fiber products.

Scinor's three operating companies - Beijing Scinor Membrane Technology Co., Ltd., Beijing Scinor Water Technology, Co., Ltd, and Scinor Water America, LLC, - benefit from over 20 years of history in reverse osmosis, hollow fiber filter, and engineering and plant construction business. Beijing Scinor Membrane Technology Co., Ltd. manufactures hollow fiber membranes, modules and systems. Beijing Scinor Water Technology, Co., Ltd is the engineering, procurement, and construction arm of the company building water treatment plants using our proprietary membranes and designs throughout Asia.

Scinor Water America, LLC is the international distribution arm of the business operating out of New York. Scinor Water America, LLC is a US company jointly owned by Scinor Water Limited and the Scinor Water America management team. Formed in 2014, the company markets, distributes, and services Scinor's TIPS PVDF Ultrafiltration membranes throughout the world.

Scinor's unique membranes were developed over a ten-year period beginning in 1993 at China's prestigious Tsinghua University under the direction of Dr. Xiao Lin Wang. These membranes are made using a patented manufacturing technique that results in an interconnected homogeneous pore structure having a uniform 0.1 micron pore size. The Scinor group of companies is the exclusive owner of this technology and has first rights to all new developments in this field coming out of Tsinghua University through a long-term research partnership.

Thermally Induced Phase Separation (TIPS) manufacturing results in PVDF membranes with a high crystalline structure that are extremely durable and that have high chemical tolerance. TIPS membranes have been proven to provide much longer service life than membranes manufactured using other manufacturing techniques. Scinor has over one hundred installations in service.

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Our facilities and quality standards are ISO 9001 certified and our green manufacturing techniques and facilities are ISO 14001 certified. Our goal is to provide the highest quality products that provide great economy of use all in an environmentally friendly way.

Retrofit Experience

Scinor has successfully commissioned over 100 systems including retrofits of most major membrane manufacturers, of both pressure and submerged configurations. Our track record demonstrates the technical expertise that has set us apart from others.

Through years of experience, we understand that the key to a successful membrane installation is a combination of a strong membrane, a solid system design, an understanding of how to apply the membrane in a particular application and ongoing service support. Scinor offers customers an extremely durable TIPS PVDF membrane, industry-leading system design experience, deep applications knowledge and a dedicated service team.

Scinor modules provide a **direct retrofit** for all major membrane vendors' installations; that is, Scinor's modules can retrofit installations with **no special hardware, no programming changes, and no process or cleaning protocol adjustments**. This means that Scinor offers a choice when replacing what once was a proprietary system – this lowers replacement costs to the end-users and also provides a TIPS PVDF membrane and all the benefits that TIPS brings – greater mechanical strength, higher chemical tolerance, and greater permeability.

Technology Overview

Thermally Induced Phase Separation, or TIPS, is a unique method for manufacturing polymeric membranes which yields a mechanically stronger, chemically more tolerant, and more permeable membrane than other methods.

Ultrafiltration as applied on drinking water and wastewater has evolved significantly over the past 30 years. While research existed for some time, the technology started gaining acceptance in the early nineties with the introduction of dead-end mode (as opposed to cross-flow mode),

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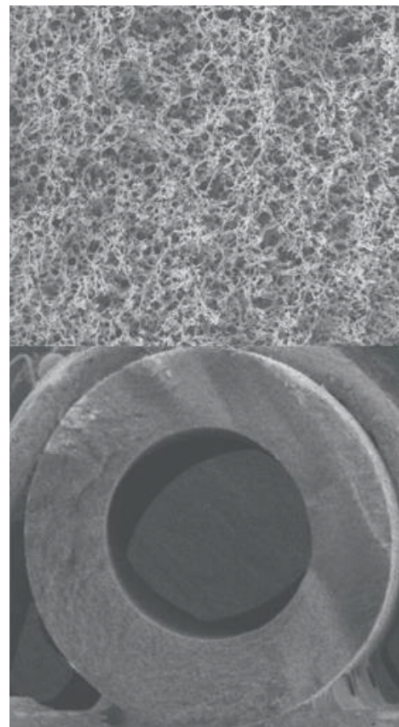


Scinor Water America, LLC
1440 Broadway, 23rd Floor
New York, NY 10018
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www.scinor.com

integrity tests, and cleaning protocols that began to increase overall cost-effectiveness. The US Surface Water Treatment Rule that became effective in 1993 further propelled the technology towards acceptance in the industry as it provided an ideal solution to meet the tighter regulations.

With tighter regulations and additional advances came more manufacturers with their own proprietary membranes. These manufacturers pushed the envelope on what could be accomplished with polymeric UF membranes and through years of competition yielded what is now commonplace in the industry – Polyvinylidene fluoride membranes, outside-in flow pattern, and pressurized membranes (as opposed to the submerged variety). While today this can be mistaken as a commodity market, there are important differentiators in the market that can provide additional value to end-users.

TIPS is the next evolution in the dynamic marketplace and one of the most important differentiators when it comes to UF. This is because TIPS membranes provide for greater permeability, greater mechanical strength, and higher chemical tolerance to the great majority of UF membranes available. In the TIPS manufacturing process employed by Scinor, phase separation occurs at high temperature resulting in a high crystalline PVDF structure with a homogeneous sponge-like, interconnected pore structure and maximum permeability. All of this leads to longer membrane life, better performance, and ultimately a better cost-effective solution.



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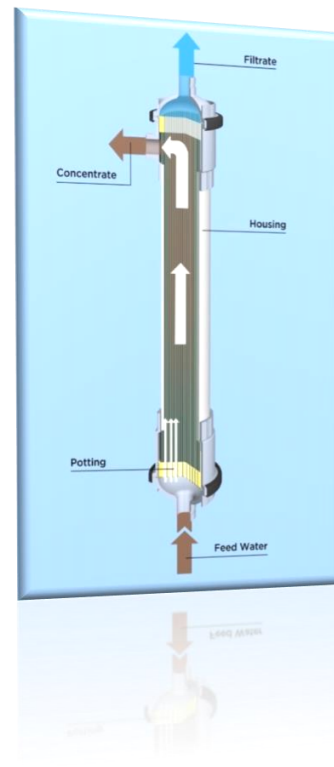
Scinor Water America, LLC
 1440 Broadway, 23rd Floor
 New York, NY 10018
 800.774.1385
 www.scinor.com

Product Overview

SMT600-P50 Pressurized Ultrafiltration Module

Scinor SMT600 series ultrafiltration modules utilizing our state-of-the-art Thermally Induced Phase Separation (TIPS) PVDF membranes provide the highest permeability, mechanical strength, and chemical tolerance in the industry. These modules are ideal for use in potable water, wastewater, desalination, and industrial applications. The SMT600-P50 retrofits major membrane vendor installations giving end-users a choice when replacing membranes.

The SMT600-P50 is an outside-in configuration module that operates in dead-end or cross-flow mode depending on specifics of the application. Cleaning processes used are simple backwash, maintenance clean, and Clean-in-Place.



PRODUCT ADVANTAGES	
<p>Excellent Filtered Water Quality</p> <ul style="list-style-type: none"> • Tight 0.1 µm pore size distribution • Low fiber breakage rate <p>Long Operational Life</p> <ul style="list-style-type: none"> • High mechanical strength and durability • >5000 mg/L Sodium Hypochlorite tolerance <p>Low Capital Cost</p> <ul style="list-style-type: none"> • High flux rates on all water sources 	<p>Low Requirements for Pretreatment</p> <ul style="list-style-type: none"> • Outside-in configuration • Optimal -flow channel <p>Low Operating and Maintenance Requirements</p> <ul style="list-style-type: none"> • Low energy and chemical consumption due to higher permeability • Automatic operation

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Scinor Water America, LLC
 1440 Broadway, 23rd Floor
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 www.scinor.com

Module Specifications

Scinor Module	Part Number	SMT600-P50
	Fiber Material	Polyvinylidene Fluoride (PVDF)
	Effective Area	538 ft ² (50 m ²)
	Nominal Pore Size	0.1 µm
	Fiber ID/OD	0.7 mm/1.3 mm
	Geometry	Ø160 mmX2330 mm
	Port Size	DN50, Side DN40
	Housing/Head	U-PVC/ABS
	Potting Material	Epoxy Resin
Operating Parameters	Temperature	33-104°F (1-40 C)
	pH Range	1-11 Continuous
	Max. NaClO	5000 mg/L
	Backwash Flux	30-70 gfd (50-120 l/mh)
	Air Scour Flow	3.1-7.5 scfm/module (5-12 Nm ³ /hr/module)
	CIP pH Range	1-13
	Max. Feed Pressure	60 psi (0.4 MPa)
	Max. TMP	45 psi (0.3 MPa)
Filtered Water Performance	Max. Air Scour	36 psi (0.25 MPa)
	Max. Backwash	36 psi (0.25 MPa)
	Turbidity	≤0.1 ntu
	Silt Density Index	≤3
	E.Coli Removal	non-detect

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 New York, NY 10018
 800.774.1385
 www.scinor.com

Commercial Offer

1.1 Pricing

Option	Description	Quantity	Unit Price	Total Price
Option 1 Initial trial set	<p><u>SMT600-P50 Module</u></p> <p>Includes:</p> <ul style="list-style-type: none"> - all necessary miscellaneous hardware for installation, as shown in attached installation drawing - Installation by others 	96	\$1,600 USD	\$153,600 USD
Option 2 Additional sets	<p><u>SMT600-P50 Module</u></p> <p>Includes:</p> <ul style="list-style-type: none"> - all necessary miscellaneous hardware for installation, as shown in attached installation drawing - Installation by others 	480	\$1,600 USD	\$768,000 USD

1.2 Validity

Option 1 offer is valid for 30 days from the date of proposal

Option 2 offer is valid for 360 days from the date of this proposal

1.3 Incoterms

DDP jobsite

Freight prepay and add

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1.4 Lead time

Option 1 lead time 2 weeks

Option 2 lead time 12 weeks

1.5 Taxes & Duties

Taxes and duties of any type are not included in pricing

1.6 Service

1-Year Silver Service Package Plan included:

- Inspection, Auditing, and Optimization – one trip, 3 days
 - Includes staff training
- **Unlimited Telephone Support**
- Monthly remote data monitoring, if applicable
- Additional service billed at \$1000/day plus travel and expenses
 - Extra trips and/or days

1.7 Attachments

Terms and Conditions of Sale

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STANDARD TERMS AND CONDITIONS OF SALE

These terms and conditions of sale ("Agreement") are applicable to any order placed with and accepted by Scinor Water America, LLC (referred to herein as "Supplier"):

1. **SCOPE OF AGREEMENT.** Supplier, upon acceptance of an Order placed by Buyer, will supply the products and services specified in the Order (the "Work") to Buyer, pursuant to the terms and conditions of this Agreement and its exhibits and Supplier's acceptance of such order submitted by Buyer is expressly limited to the terms and conditions of this Agreement notwithstanding any contrary provision contained in Buyer's purchase orders, invoices, acknowledgements or other documents. The details of the Work (e.g. quantity, price, and product specifications) shall be set forth in the relevant Order.
2. **PRICE AND TERMS.** (a) The prices payable by Buyer for goods and services to be supplied by Supplier under this Agreement will be specified in the applicable Order. Unless otherwise expressly stated in an Order, all prices exclude shipping and taxes. (b) Payment terms are net thirty (30) calendar days from the date of the invoice. If Buyer does not pay an invoiced amount within terms, Buyer will in addition pay finance charges of one and one-half percent (1.5%) per month on the late balance and Supplier reserves the right to (1) withhold shipment of the Work until full payment is made; and/or (2) revoke any credit extended to Buyer. In the event that Buyer's account is more than ninety (90) days in arrears, Buyer shall reimburse Supplier for the reasonable costs, including attorney's fees, of collecting such amounts from Buyer. In the event of any dispute regarding an invoice, no finance charges will apply in the event that Buyer provides written notice of the dispute prior to the due date for such payment. (c) Upon reasonable request by the Supplier, Buyer shall provide copies of its most recent audited financial statements or other reasonable evidence of its financial capacity and such other information as Supplier reasonable requests to determine credit status or credits limits. (d) Buyer shall provide notice within five (5) business days of the occurrence of any event which materially affects Buyer's ability to perform its obligations under this Agreement including but not limited to: (i) the material default of any supplier or sub-contractor; (ii) labor strike or dispute; or (iii) material uncured default with respect to any debt obligations of Buyer. (e) Pricing schedules (whether attached to this Agreement or an Order) are subject to change upon a change in the price of applicable raw materials (as reflected on a recognized trade or commodity pricing tracker) in excess of five percent (5%) from the date of such schedule. (f) Unless otherwise specified in the Order, Work will be delivered FOB Supplier's manufacturing facility and will be shipped to Buyer via carriers selected by Supplier.
3. **BUYER MATERIALS AND DATA.** (a) Buyer represents and warrants that any matter it furnishes for performance of services by Supplier (i) does not infringe any copyright or trademark or other Intellectual Property Rights of any third party; (ii) is not libelous or obscene; (iii) does not invade any persons right to privacy; and (iv) does not otherwise violate any laws or infringe the rights of any third party. (b) Buyer warrants that it has the right to use and to have Supplier use on behalf of Buyer any data provided to Supplier or its Affiliates by Buyer including specifically customer names, identifying information, addresses and other contact information and related personal information ("Data").
4. **INTELLECTUAL PROPERTY.** Any and all inventions, discoveries, patent applications, patents, copyrights, trademarks and trade names, commercial symbols, trade secrets, work product and information embodying proprietary data existing and owned by Buyer as of the date of the Order or made or conceived by employees of Buyer during the Term of the Order shall be and remain the sole

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and exclusive property of Buyer provided that Buyer grants to Supplier a license to use, display and distribute (and to sub-license its affiliates and sub-contractors to use, display and distribute) any intellectual property rights delivered to Supplier as reasonably necessary to perform any Order. Any and all inventions, discoveries, patent applications, patents, copyrights, trademarks and trade names, commercial symbols, trade secrets, work product and information embodying proprietary data existing and owned by Supplier as of the date of the Order or made or conceived by employees, consultants, representatives or agents of Supplier during the term of this Agreement shall be and remain the sole and exclusive property of Supplier.

5. **CONFIDENTIAL INFORMATION.** Any information that parties receive or otherwise have access to incidental to or in connection with this Agreement (collectively, the “Confidential Information”), shall be and remain the property of the disclosing party. Confidential Information shall not include information which: (i) was in the possession of the Receiving Party at the time it was first disclosed by the Disclosing Party; (ii) was in the public domain at the time it was disclosed to the Receiving Party; (iii) enters the public domain through sources independent of the Receiving Party and through no breach of this provision by the Receiving Party; (iv) is made available by the Disclosing Party to a third party on an unrestricted, non-confidential basis; (v) was lawfully obtained by the Receiving Party from a third party not known by the Receiving Party to be under an obligation of confidentiality to the Disclosing Party; or (vi) was at any time developed by the Receiving Party independently of any disclosure by the Disclosing Party. Confidential Information may be used to the extent necessary to perform this Agreement and the parties shall not disclose Confidential Information to any third party, except to its agents (who have executed confidentiality agreements containing terms substantially similar to the terms) as necessary to provide the Work hereunder. In no event shall Buyer acquire any right, title or interest in and to any product or process information, including related know how, either existing or developed during the course of the business relationship with Supplier and Buyer, and in no event shall Supplier acquire and right, title, or interest in and to any materials or information provided to it by Buyer.
6. **INDEMNIFICATION.** The indemnifying party, as Indemnitor, shall indemnify, defend and hold harmless the indemnified party, as Indemnitee, its officers, directors, employees, agents, subsidiaries, and other affiliates from and against any and all claims, damages, liabilities, and expenses (including attorney fees) arising from any third-party claim based on Indemnitor’s (or its agent’s) breach of any representation, warranty, covenant, agreement, or obligation under the Order or this Agreement , or Indemnitor’s (or its agent’s) grossly negligent and/or willful acts in carrying out its obligations under the Order or the Agreement, provided that in no event shall Supplier be responsible for any claims arising out of its compliance with instructions, requirements, or specifications provided by or required by Buyer (including the use of information, artwork, logos, and/or trademarks provided by Buyer). Neither party will be responsible for indemnifying another party hereto where the basis of the indemnity claim arises out of such other party’s own negligence or willful misconduct. In order to avail itself of this indemnity provision, Indemnitee shall promptly provide notice to Indemnitor of any such claim, tender the defense of the claim to Indemnitor, and cooperate with Indemnitor in the defense of the claim. Indemnitor shall not be liable for any cost, expense, or compromise incurred or made by Indemnitee in any legal action without the Indemnitor’s prior written consent.
7. **BREACH.** In addition to all other rights to which a party is entitled under this Agreement, if either party breaches any term of the Order or the Agreement, the non-breaching party shall have the right to: (a) terminate the Order immediately upon written notice to the other party; and (b) seek to obtain

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injunctive relief to prevent such breach or to otherwise enforce the terms of this Agreement. Failure to properly demand compliance or performance of any term of the Order or this Agreement shall not constitute a waiver of Supplier's rights hereunder and prior to any claim for damages being made for non-conformance or breach, Buyer shall provide Supplier with reasonable notice of any alleged deficiencies in the Work or performance under the Order or this Agreement and Supplier shall have a reasonable opportunity to cure any such alleged non-conformance or breach.

8. **WARRANTY.** Supplier warrants that the Work shall reasonably conform to specifications in all material respects. Other than the warranties set forth in this section, Supplier makes no warranty of any kind, expressed or implied or otherwise whatsoever, that the services performed or any items produced will be merchantable or fit for any particular purpose or use. In the event of any breach of any warranty specified in this provision, Buyer's exclusive remedy shall be that Supplier shall, at its option, repair or replace any defective goods at no cost to Buyer or refund any purchase price paid for such Work.
9. **LIMITATION OF LIABILITY.** IN NO EVENT SHALL EITHER PARTY BE LIABLE HEREUNDER FOR INCIDENTAL, SPECIAL, INDIRECT, CONSEQUENTIAL, OR PUNITIVE DAMAGES EVEN IF ADVISED IN ADVANCE OF THE POSSIBILITY FOR SUCH DAMAGES AND VENDOR'S TOTAL LIABILITY FOR DAMAGES UNDER THIS AGREEMENT AND THE ORDER SHALL BE LIMITED TO THE TOTAL FEES DUE HEREUNDER FOR THE INVOICE UPON WHICH A CLAIM IS BASED.
10. **NOTICE.** Any notice sent pursuant to the Order or this Agreement shall be sent by certified mail, return receipt requested, or by overnight mail to the addresses on the Order or to such address as either party may in the future designate. A copy of any notice to Supplier shall be also sent to General Counsel, Scinor Water America, LLC, 1440 Broadway, 23rd Floor, New York, NY 10018 together with a copy this Agreement. Notices shall be effective upon receipt.
11. **ASSIGNMENT.** Except as otherwise provided, the Order and this Agreement shall be binding upon and inure to the benefit of the parties' successors and lawful assigns.
12. **STATUS.** Buyer and Supplier are separate entities. Nothing in the Order or this Agreement shall be construed as creating an employer-employee or joint venture relationship.
13. **COMPLIANCE WITH LAW.** Each party shall comply with all state, federal and local laws and regulations applicable to its performance hereunder.
14. **GOVERNING LAW.** The Order and this Agreement shall be governed by the laws of the State of New York, without reference to conflicts of law principles. Any legal suit, action or proceeding arising out of or relating to the Order or these this Agreement shall be commenced in a federal court in New York or in state court in the County of Suffolk, New York, and the appellate courts thereof, and each party hereto irrevocably submits to the exclusive jurisdiction and venue of any such court in any such suit, action or proceeding. With respect to any litigation arising out of the Order or this Agreement, the parties expressly waive any right they may have to a jury trial and agree that any such litigation shall be tried by a judge without a jury and the prevailing party shall be entitled to recover its expenses, including reasonable attorney's fees, from the other party.

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15. **FORCE MAJEURE.** Neither party shall be liable for any failure to perform or delay in performance of this Agreement to the extent that any such failure arises from acts of God, war, civil insurrection or disruption, riots, government act or regulation, strikes, lockouts, labor disruption, cyber or hostile network attacks, inability to obtain raw or finished materials, inability to secure transport, or any cause beyond such party's commercially reasonable control.
16. **SURVIVAL.** In the event any provision of the Order or this Agreement is held by a tribunal of competent jurisdiction to be contrary to the law, the remaining provisions of the Order or this Agreement will remain in full force and effect. All sections herein relating to payment, ownership, confidentiality, indemnification and duties of defense, representations and warranties, waiver, waiver of jury trial and provisions which by their terms extend beyond the Term shall survive the termination of the Order and this Agreement.
17. **ENTIRE AGREEMENT.** The Order, this Agreement and the operative provisions of any quotation issued by Supplier and any purchase order issued by Buyer, sets forth the entire agreement and understanding among the parties as to the subject matter hereof, and merges and supersedes all prior discussions, agreements, and understandings of every and any nature among them. No proposal, purchase order, order confirmation, acceptance, or any other document provided by either Party to the other, nor any electronic click-wrap, terms of use or similar online consent or acceptance language accompanying or set forth as a prerequisite to any electronic interface or utility associated with any Work, shall be deemed to amend the terms hereof and any such contradictory or additional terms shall be ineffective. No party shall be bound by any condition, definition, warranty, or representations, other than as expressly set forth or provided for in the Order or this Agreement, or as may be, on or subsequent to the date hereof set forth in writing and signed by the party to be bound thereby. In the event of any ambiguity or conflict between any of the terms and conditions contained in this Agreement and the terms and conditions contained in an Order, the terms and conditions of this Agreement shall control, unless the Parties have expressly provided in such Order that a specific provision in this Agreement is amended, in which case this Agreement shall be so amended, but only with respect to such Order. The Order or this Agreement may not be amended, supplemented, changed, or modified, except by agreement in writing signed by the parties to be bound thereby.

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Date: August 29, 2017

From: Matthew Porras, Management Analyst

Subject: Review of Updated Standard Specifications for Drinking Water, Recycled Water, and Sewer Facilities

On March 16, 2016, the Board of Directors adopted Resolution No. 2016-13 related to standard specifications for drinking water, recycled water and sewer facilities.

For the 2017 update, District staff is focusing on checking part numbers and material types for current availability as well as adding future Automated Meter Infrastructure (AMI) and smart manhole specifications in expectation of technological advances.

Following the approval of the standard drawings, the District’s website will be updated to include the entire package of standard drawings as well as individual standards for use by consultants, engineers and contractors.

The screenshot shows the website's navigation menu and three columns of standard design drawings. Each column includes a title, a brief description, and a table of standards with their descriptions and PDF links.

Drinking Water Standard Design Drawings		Sewer Standard Design Drawings		Recycled Water Standard Design Drawings	
Standard Number	Description	Standard Number	Description	Standard Number	Description
W-0	Water Standard Index - PDF	S-0	Sewer Standard Index - PDF	R-0	Recycled Water Standard Index - PDF
W-1	Standard Legend - PDF	S-1	Standard Legend - PDF	R-1	Standard Legend - PDF
W-2	Potable Water Pipeline Location - PDF	S-2	Sewer Mainline Location - PDF	R-2	Recycled Water Pipeline Location - PDF
W-3	Utility Locations - Sections - PDF	S-3	Manhole Detail - PDF	R-3	Recycled Water Notes for Non-Residential Sites - PDF
W-4	Dual Plumbed Residential Properties Requiring 1" Fire Sprinkler Service - PDF	S-4	Concrete Base and Joint Detail - PDF	R-4	Recycled Water Notes for Onsite Residential Use - PDF
W-5	Residential Properties Requiring 1" Fire Sprinkler Service - PDF	S-5	Adjust Existing Manhole to Grade - PDF	R-5	3/4" Dual Recycled Water Meter Assembly - PDF
W-6	Manifold Assembly for Four to Ten 3/4" and 1" Water Services - PDF	S-6	Manhole Shaft Location Details - PDF	R-6	1" Recycled Water Meter Assembly - PDF
W-7	1-1/2" and 2" Copper Water Service Installation - PDF	S-7	Traffic Manhole Frame and Cover - PDF	R-7	1-1/2" and 2" Recycled Water Service Installation - PDF
W-8	3" and 4" Water Meter Installation - PDF	S-8	Special Manhole (20' to 30' Deep) - PDF	R-8	Not In Use
		S-9	Special Manhole (30'+ Deep) - PDF	R-9	Not In Use
		S-10	Drop Manhole Detail (Special Acceptance Only) - PDF		



Date: August 29, 2017

From: Matthew Porras, Management Analyst

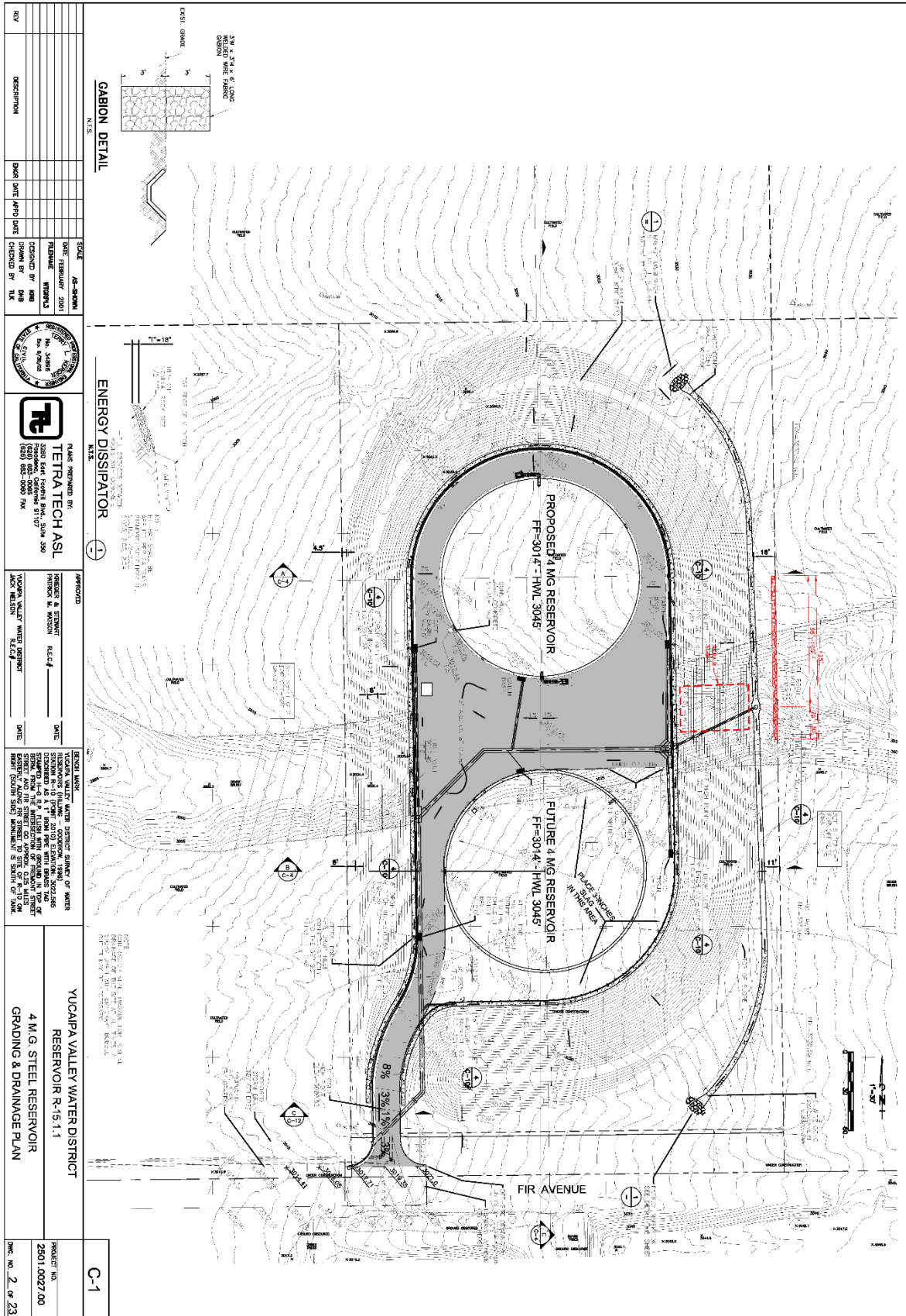
Subject: Project Status Update for the Slope Repair at Drinking Water Reservoir R-15.1

District crews have been working to clean up the soil material that washed down the east facing slope at the drinking water reservoir R-15.1 located on Fir Avenue, East of Fremont Street in Yucaipa.



The slope damage that occurred in this area is the result of a clogged drain that was filled with sediment from the sheet flow run-off that accumulates from the adjacent parcel. The slope was originally engineered to control run-off with two concrete lined swales and a storm drain system that conveys the collected rain water away from the slopes to prevent erosion. When the upper swale and drain filled with sediment, the run-off eroded the slope as the water traveled down to the pavement below, displacing a large amount of soil material. District staff observed the issue during a rain event on January 23, 2017. The cleanup effort has consisted of District staff removing the soil material on the pavement and in the drains.

In addition to the repair of the slope, the District is considering implementing additional preventative solutions. The improved design will include 125 linear-feet of gabions installed near the eastern property line where the natural drainage occurs. The gabions will slow the run-off and collect the sediment before clogging the drains and swales. The District is in the process of contracting the remaining work out in the interest of time and resources.



REV	DESCRIPTION	DATE	APPROVED	DESIGNED BY	CHECKED BY

GABION DETAIL
N.T.S.

SOIL: A-B-C-SHIMM
DATE: FEBRUARY 2011
DESIGNED BY: WRM
DRAWN BY: MBS
CHECKED BY: TLT

ENERGY DISSIPATOR
N.T.S.

PLANS PREPARED BY:
TETRA TECH ASL
2350 Lake Forest Blvd., Suite 300
Costa Mesa, CA 92626
(714) 440-0000 FAX

APPROVED

DESIGNED & DRAWN BY: [Signature]
DATE: [Date]

YUCAIPA VALLEY WATER DISTRICT
DATE: [Date]

REVISION MARK

YUCAIPA VALLEY WATER DISTRICT BOARD OF WATER
STATION R-15.1.1 (FORM 2010) EXISTING: 2002 LBS
SHOWN: 4.4 M.G. STEEL WITH 2010 DESIGN. THE
STATION FROM THE INTERSECTION OF PROPOSED STREET
RESERVE ALONG THE STREET TO THE CENTERLINE OF
RIGHT-OF-WAY SHOWN IS 2010.10.

YUCAIPA VALLEY WATER DISTRICT
RESERVOIR R-15.1.1
4 M.G. STEEL RESERVOIR
GRADING & DRAINAGE PLAN

C-1

PROJECT NO.
2501.0027.00

DATE: 2 OF 23







Date: August 29, 2017

From: Matthew Porras, Management Analyst

Subject: Project Status Update for the Power Supply and Road Improvements at Drinking Water Reservoir R-18.4

The Yucaipa Valley Water District is in the process of adding electrical service and improving the access road to the drinking water reservoir R-18.4 located off Toucan Court in Yucaipa. The site needs reliable power to communicate with the Supervisory Control and Data Acquisition (SCADA) system that manages the drinking water distribution system. The current electrical demand for this site is supplied by a small solar panel and two deep cycle automotive style batteries. The District only operates two other sites in this manner, R16.2 and R17.51/52. The battery-powered sites can be problematic and require additional maintenance for consistent performance.



The R-18.4 site is especially important to operate the future Automated Meter Infrastructure as its physical location provides the most complete signal coverage. This scope of this project will include the installation of an electrical service line from the transformer on Toucan Court to the new panel at R18.4 that will be buried in the access road. The new service will supply the current and future power demands through a distribution panel mounted near the tank itself.



The access road (pictured above) is used by the District to maintain the facility as well as a property owner of the adjacent parcel and will be base paved over the trench after the conduit is installed. The final top coat slurry seal will be applied over the entire road surface once the all work has been completed. The preliminary construction drawings are attached.

Policy Issues



Yucaipa Valley Water District



Date: August 29, 2017
From: Matthew Porras, Management Analyst
Subject: Overview of Current Water Meter Installation Fees and Options Related to Amend the Fee Structure to Achieve Full Cost Recovery

The District staff is in the process of analyzing various rates, fees and charges for water, sewer and recycled water operations. One of the largest differentials between the actual cost of service and the revenue received is related to the installation of water meters for new development. With the anticipated acceleration of new development, it is important that this fee is set properly so existing customers do not subsidize the cost of new development.

The actual cost for installing water meters has increased over the past several years due to new regulations and initiatives implemented by the District. These changes include:

- Residential Fire Sprinkler Requirement – In 2011, the California Code of Regulations required increased meter sizes for automatic residential fire sprinklers.
- Dual-Plumbed Residential Backflow Protection – The implementation of dual-plumbed homes throughout the District has an impact on the cost of service.
- Automated Meter Infrastructure Technology – The installation of remote radio reading equipment will add to the cost of water meter installations.

Existing Rate Schedule

The Yucaipa Valley Water District Resolution No. 18-2011, Section 2.7 provides the current fee structure for the installation of water meters [Attached]:

- 2.7 Potable Water & Recycled Water Meter Installation Charge. The cost associated with the installation of a ¾" water meter shall be \$325 per meter and \$375 for a 1" water meter. The cost associated with the installation of larger water meters shall be the actual cost of all labor, material, and equipment charges, plus employee benefits, overhead and administrative surcharges per District Resolution with a deposit collected prior to installation.

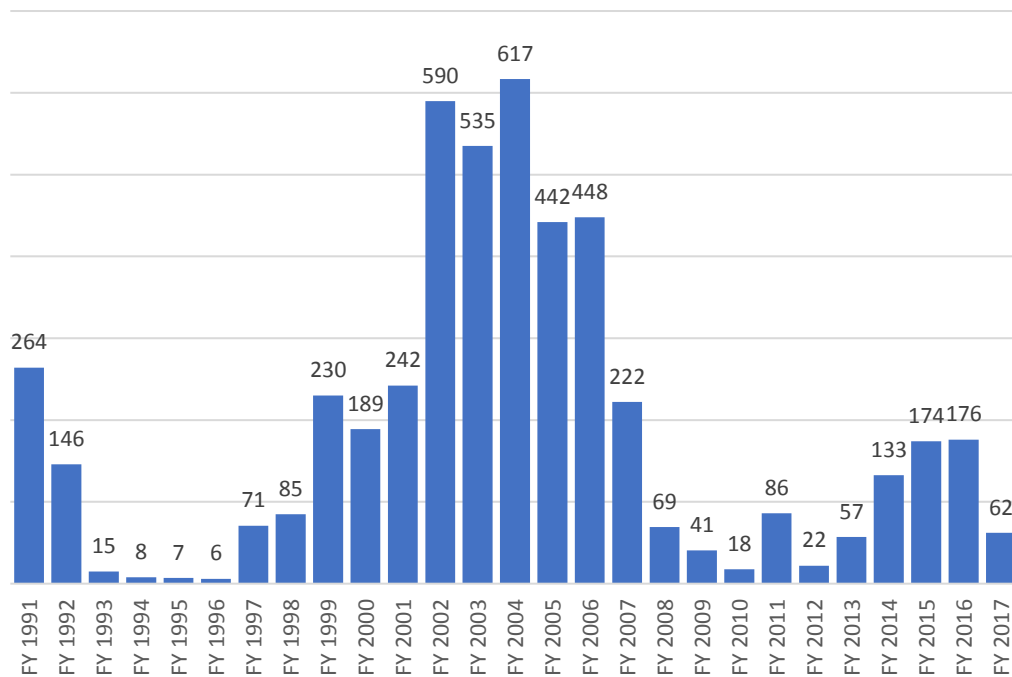
The following table illustrates the differential between the revenue received and the actual cost of various types of meter installations.

Common Meter Installation Cost Analysis

Type of Meter Installation	Current Fee Collected	Actual Cost with Updated Standards	Difference
3/4" Drinking Water Meter Install	\$325	\$491	\$166
3/4" Recycled Water Meter Install		\$491	\$166
1" Recycled Water Meter Install	\$375	\$572	\$197
1" Drinking Water Meter Install With Fire Sprinklers		\$914	\$539
1" Drinking Water Meter Install with Fire Sprinklers on Dual Plumbed Residence		\$1,088	\$713

In the instance that a home is dual-plumbed, two water meter installations will be required thus incurring a larger cost differential. The solution to reduce or eliminate the difference of the fee collected and the actual cost should take place before residential development increases.

Historical Water Facility Capacity Charges



The long-term average of new home construction is about 183 new dwellings per year. Using an average of 183 new dwellings per year with a single drinking water meter the loss of revenue is approximately \$130,000 each year with drinking water meters alone [183 x \$713 = \$130,479]. The addition of a recycled water meter will increase the loss by \$36,000 [183 x \$197 = \$36,051], for an annual loss of over \$165,000.

The purpose of this workshop memorandum is to discuss the implementation of the fee adjustment.

Fee Adjustment Implementation Options

Type of Meter Installation	Option 1		Option 2		Option 3		
	Proposed Adjusted Fee (Effective Immediately)	Proposed Adjusted Fee (Effective January 2018)	Annual Fee Increase	Adjusted Fee 2018	Adjusted Fee 2019	Adjusted Fee 2020	
3/4" Drinking Water Meter Install	\$490	\$490	\$55	\$380	\$435	\$490	
3/4" Recycled Water Meter Install	\$490	\$490	\$55	\$380	\$435	\$490	
1" Recycled Water Meter Install	\$570	\$570	\$66	\$440	\$505	\$570	
1" Drinking Water Meter Install With Fire Sprinklers	\$910	\$910	\$180	\$555	\$734	\$910	
1" Drinking Water Meter Install with Fire Sprinklers on Dual Plumbed Residence	\$1,085	\$1,085	\$238	\$610	\$845	\$1,085	

Development Projects



Yucaipa Valley Water District



Date: August 29, 2017
From: Joseph Zoba, General Manager
Subject: Overview of the Proposed Summerwind Development, Calimesa

The District staff has been working together with representatives from Argent Management for the development of the Summerwind Project in Calimesa, California. Based on recent activity at the project site, the District staff requested a presentation about the development project for the benefit of the Board of Directors and members of the public.

Information about this project will be provided by representatives of Argent Management.

Administrative Issues



Yucaipa Valley Water District



Date: August 29, 2017

From: Matthew Porras, Management Analyst

Subject: Notice of Completion for the Construction of Replacement Pipelines on Date Avenue, Dodd Street, Panorama Drive, Lennox Street, Verona Street, Calvin Street, and Vista Lane - Yucaipa

On April 4, 2017, the Board of Directors awarded a construction project to Borden Excavating for the construction of replacement pipelines on Date Avenue, Dodd Street, Panorama Drive, Lennox Street, Verona Street, Calvin Street, and Vista Lane Replacement Pipelines [Director Memorandum No. 17-032]. The project is now complete and the construction of approximately 4,600± linear feet of 8-inch mortar lined ductile iron pipe, including various laterals, valves and appurtenances are installed.



Record Without Fee
Per Govt. Code 6103

Recording Requested By:
Yucaipa Valley Water District

And When Recorded Mail To:
Yucaipa Valley Water District
P.O. Box 730
Yucaipa, CA 92399

SPACE ABOVE THIS LINE FOR RECORDERS USE

NOTICE OF COMPLETION

Project Number/CMMS Number: P-02-283
Director Memorandum Number for Authorization: DM 17-032
Director Memorandum Number for Notice of Completion: DM 17-XXX

Notice pursuant to Civil Code Section 3093, must be filed within 10 days after completion.

Notice is hereby given that:

1. The undersigned is owner or corporate officer of the owner of the interest in the property hereinafter described:
2. The full name of the owner is Yucaipa Valley Water District
3. The full address of the owner is 12770 Second Street, Yucaipa, CA 92399
4. The Nature of the Interest or Estate of the Undersigned is: In Fee
5. A work performed hereinafter described was completed on August 21, 2017. The work done was: Date Avenue, Dodd Street, Panorama Drive, Lennox Street, Verona Street, Calvin Street, and Vista Lane Replacement Pipelines
6. The name of the contractor for such work was: Borden Excavating
April 5, 2017
(Date of Contract)
7. The property on which said work was complete in the City of Yucaipa
County of San Bernardino, State of CA, and is described as APN: None
8. The street address of said property is None
(if no street address has been assigned, insert "none")

Dated September 5, 2017
Matthew Porras, Management Analyst
Yucaipa Valley Water District

Verification

I, the undersigned, say: I am the General Manager of the Declarant of the foregoing Notice of Completion; I have read said Notice of Completion and know the comments thereof; the same is true to my knowledge. I declare under penalty of perjury that the foregoing is true and correct.

Executed on September 5, 2017 at Yucaipa, CA.

Joseph B. Zoba, General Manager
Yucaipa Valley Water District



August 21, 2017

818-86.6 F/C

Matthew Porras
 Yucaipa Valley Water District
 P.O. Box 730
 Yucaipa, CA 92399

Subject: Date Avenue, Dodd Street, Panorama Drive, Lennox Street, Verona Street,
 Calvin Street, and Vista Lane Replacement Pipelines
 Recommendation of Acceptance of Contract Work

Dear Mr. Porras:

All work required to be performed by Borden Excavating for the Date Avenue, Dodd Street, Panorama Drive, Lennox Street, Verona Street, Calvin Street, and Vista Lane Replacement Pipelines Project is essentially complete and the final Contract Amount for same is set forth as follows:

Original Contract Amount:	\$1,040,222.00
Contract Change Orders:	<u>(\$105,480.00)</u>
Final Contract Amount:	\$934,742.00

Since the Contract Work has been essentially completed in accordance with the Contract Documents, we recommend the District accept said Work. Subsequent to Board acceptance, a Notice of Completion should be filed and thereafter, following the lien period, the District should make final payment (i.e. release retained amount), provided no Stop Notices have been filed.

If you have any questions, please call.

Sincerely,

KRIEGER & STEWART

A handwritten signature in blue ink, appearing to read 'Patrick M. Watson', is written over the printed name.

Patrick M. Watson

PMW/
 818-86-RECACCEPT

C.O. NO. 1

PAGE 1 OF 2

CONTRACT CHANGE ORDER NO. 1

CONTRACT Date Avenue, Dodd Street, Panorama Drive, Lennox Street, Verona Street, Calvin Street, and Vista Lane Replacement Pipelines DATED April 4, 2017 BY AND BETWEEN Yucaipa Valley Water District (OWNER), AND Borden Excavating, Inc (CONTRACTOR), is hereby directed to make the following change(s) in Contract Work:

ITEM NO.	DESCRIPTION OF CHANGE	DECREASE \$	INCREASE \$
1	Eliminate paving overlay, cracked paving repair, extra depth pipe, permit fees, and field orders.	105,480.00	

Total DECREASE in Contract Amount	<u>(\$105,480.00)</u>
Total INCREASE in Contract Amount	<u>\$0.00</u>
Net change in Contract Amount	<u>(\$105,480.00)</u>
Contract Amount Prior to Change	<u>\$1,040,222.00</u>
Contract Amount Adjusted for Change	<u>\$934,742.00</u>

Rev 0614
 Date Avenue, Dodd Street, Panorama Drive,
 Lennox Street, Verona Street, Calvin Street, and
 Vista Lane Replacement Pipelines

Change Order Form S-1

CONTRACT CHANGE ORDER NO. 1

PAGE 2 OF 2

By reason of Change Order No. 1, time of completion shall be adjusted as follows;

0 Working Days. Adjusted Contract Completion Date shall be October 1, 2017.

All provisions of the Contract shall apply hereto, and shall become effective when fully executed (signed and dated) by both parties.

Recommended by (Engineer)  Date: 8-12-17

Accepted by (Contractor)  Date: 8/10/17

Approved by (Owner) _____ Date: _____

Remarks _____



Date: August 29, 2017
From: Matthew Porras, Management Analyst
Subject: Review of an Advanced Metering Infrastructure (AMI) Agreement Between Yucaipa Valley Water District and Sensus USA

The Yucaipa Valley Water District is preparing to implement a districtwide Automated Meter Infrastructure (AMI) system. The major components of an Automated Meter Infrastructure include the smart meter with transceiver (Smart Point), the tower gateway base stations (TGB), and the regional network interface (RNI). Utilizing these components, water meter data is conveyed via radio frequency and cellular communication back to the database (RNI) where the information is used for billing and consumption reports. The advantages of transmitting the customer meter data with an Automated Meter Infrastructure are far reaching and include hourly meter reads, detailed water consumption analysis, leak detection and backflow alarms, as well as the elimination of manual meter reading.

During a Regular Board Meeting on February 7, 2017, Director Memorandum 17-017 was approved with the motion outlined below.

Following a staff presentation by General Manager Joseph Zoba and discussion by board members, Director Lonni Granlund moved and Director Bruce Granlund seconded a motion to authorize District staff to proceed with the following:

1. Implement the AMI Project funded from water depreciation reserves and possible grant funds using Sensus as the primary provider of the FlexNet communication system.
2. Prepare a resolution setting and automatically adjusting the cost as a time and material expense related to the installation of fully integrated AMI water meters for all new installations.
3. Plan for Capital Improvement Project budget funding each year and implementation of a meter replacement program.
4. Include in a future financial rate study the proposed annual increase of \$0.25 for ten years to provide funding for the replacement and sustainability of the overall AMI system.

The motion was approved by the following vote:

Director Jay Bogh - Yes
Director Bruce Granlund - Yes
Director Lonni Granlund - Yes
Director Chris Mann - Yes
Director Tom Shalhoub - Yes

The District has selected Sensus Flexnet as the network service provider for the implementation of the Automated Meter Infrastructure. The local Sensus dealer is Aqua Metric Sales Company, will assist in the configuration of the equipment, set up of the database and billing integration, and provide training for the systems.

The District currently has approximately 5,200 Sensus meters installed with a total number of meters in the system of 12,900 leaving 7,700 meters in need of upgrading.

Cost to Auto-Read Existing 5,000 Smart Meters				
Service/Equipment	Quantity	Price	Discount	Total
M-400 BaseStation	3	\$35,000.00	\$21,000.00	\$84,000
520-M SmartPoint	5,200	\$150.00		\$780,000
SaaS Set Up Fee	1	\$7,725.00		\$7,725
Analytic Set Up Fee	1	\$5,625.00		\$5,625
Training	1	\$6,000.00		\$6,000
AMI Meter Lid	5,200	\$50.00		\$260,000
Internet Modem	3	\$775.00		\$2,325
Total				\$1,145,675
Cost to Upgrade Remaining 7,700 Meters to Auto-Read				
1" iPearl Meter	635	\$175.00		\$111,125
3/4" iPearl Meter	7,065	\$120.00		\$847,800
520-M SmartPoint	7,700	\$150.00		\$1,155,000
AMI Meter Lid	7,700	\$50.00		\$385,000
Total				\$2,498,925
Annual Cost				
Software Annual Fee	1	\$26,225.00		\$26,225
BaseStation Maint. Fee	1	\$3,000.00		\$3,000
Modem Fee*	3	\$720.00	Per Year	\$2,160
Total				\$31,385
* Internet Modem Fee based on 3 towers at \$20/month				

Cost to Auto Read Existing 5,200 Smart Meters	Cost to Upgrade Remaining 7,700 Meters	Total Auto Read 12,900 Meters	Annual Cost
\$1,145,675	\$2,498,925	\$3,644,600	\$31,385

The quote from Aqua Metric and the AMI contact are attached. The role of Aqua Metric will be to provide customer service to the District for the Sensus products. Aqua Metric will provide training for the new Flex-Net software and database management. They will install and set up the three base stations and ensure they function with the transceivers that the District installs. Aqua Metric will integrate the District's billing software with the Sensus Flex-Net software to generate the automated downloading of the meter reads into the billing system. The Sensus Flex-Net system will receive hourly reads from each meter in the system providing leak detection and backflow alarms as well as detailed consumption reports.

The Sensus AMI Agreement outlines the details of the licensed spectrum, the software, equipment, and services provided.

The District is reviewing the AMI agreement and preparing related systems for the upgrade. The existing billing system will work with the Sensus Flex-Net software but is in need of an update. Once the billing system update is complete, the integration of the Sensus software will take place.

Another improvement in preparation for AMI is the installation of the electrical service at the R-18.4 reservoir site. The R-18.4 site is a significant antenna location because of its physical location and ability to propagate a robust RF signal. District staff is also updating the standard design drawings in anticipation of AMI to include the required transceiver (Smartpoint).

Lastly, the fee that is associated with meter installations must be revised and updated with current costs and new equipment for AMI. All of these considerations are to improve the quality of service the District can provide with the use of improved technology.



Aqua Metric Sales Company 4050 Flat Rock Dr., Riverside CA 92505 • Phone: (951) 637-1400 Fax: (951) 637-1500



August 11, 2017

Aqua-Metric Sales Company is pleased to propose the Sensus Flex-Net AMI system to the Yucaipa Valley Water District. Aqua Metric and Sensus understand the intent of the District to deploy a proven, reliable, feature-rich AMI network that will provide the following;

- Enhanced customer service
- Increased revenue through more accurate metering
- Reduction of employee injuries
- Increased efficiency and reduced costs

Sensus Flex-Net is the industry's only solution for utilities that demand unmatched customer service and pinpoint-accurate reads. Only Flex-Net delivers Primary-Use licensing by the FCC, which guarantees an uncluttered, crystal clear path for transmissions. And that paves the way for an industry-leading two watts of power, making the Flex-Net system the only mass-deployed utility system with the highest level of protection, power and productivity in North America.

Flex-Net Advanced Metering Infrastructure (AMI) solution is offered exclusively from Sensus. It empowers water utilities with a proven means to increase meter reading efficiency, reduce overhead costs and enhance customer service simply, reliably, and with unlimited flexibility.

Sensus Flex-Net is composed of three main components the Flex-Net BaseStation, Sensus 520M SmartPoints, and Sensus MDM software as a service.

Sensus Flex-Net BaseStation (M400) is a long range radio transceiver that communicates with SmartPoints deployed throughout the water utility. With the BaseStation broadcasting on a primary licensed frequency at 8 watts, makes Sensus Flex-Net the most powerful and most reliable 2-way AMI network on the market.

The Flex-Net SmartPoint is a radio transceiver that provides water utilities inbound and outbound access to water measurement and ancillary device diagnostics via radio signal. The SmartPoint 520M is designed for submersible, pit-set environments. The SmartPoint broadcasts hourly meter data 6 times a day with 7 days of hourly historical data so no data will be lost on missed transmissions. Available in a 2-port option which allows the utility to connect two meters to a single SmartPoint.

The Sensus Analytic software is a user-friendly interface that allows the utility to use numerous reports that can be automatically distributed to staff through e-mail. Analytics offers easy to read graphs and reports on hourly usage for each individual meter throughout the system. Sensus Analytic Customer Portal also available as an option with Sensus Flex-Net.



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Sensus AMI Cost Breakdown

Unit Description	Unit Cost
Sensus M-400 AMI BaseStation 2-way (Includes Installation)	\$35,000.00*
520-M SmartPoint Single Port	\$133.75
520-M SmartPoint Dual Port	\$148.75
BaseStation Maintenance Fee (Starting Year 2)	\$3,000.00

*If all 3 BaseStation are purchased at one time, a \$7,000.00 discount will be applied per BaseStation

Sensus AMI Software Cost Breakdown

Sensus Analytic Essential Package:

SmartPoints Installed	1 > 5,000	5,000 > 10,000	10,000 > 14,000
Yearly Cost	\$12,500.00	\$18,825.00	\$26,225.00

Software as a Service One time fees	Unit Cost
SaaS RNI System Set-Up Fee	\$7,725.00
Sensus Analytic Set-Up and Integration Fee	\$5,625.00
Analytic and RNI Training (Onsite)	\$6,000.00

SaaS includes software support and:

- Daily backup
- Data replication to a Disaster Recovery site
- Anti-Virus and Malware subscription and scanning
- Operating System support, troubleshooting, security patching and upgrades
- Linux Red Hat, Microsoft Windows Server, Microsoft SQL Server and Oracle licenses and ongoing maintenance
- Hardware maintenance or refresh
- Tier IV SSAE 16 Data Center facility



Aqua Metric Sales Company 4050 Flat Rock Dr., Riverside CA 92505 • Phone: (951) 637-1400 Fax: (951) 637-1500

All products, software, and services are subject to a 3% yearly cost increase.

Further information on all products and services proposed can be found at www.sensus.com. We would like to thank you again for your interest in Sensus Flex-Net and your ongoing business with Aqua Metric Sales Co.

Sincerely,
Steve Kamiyama
Aqua Metric Sales Company
Account Manager



Advanced Metering Infrastructure (AMI) Agreement

between

YUCAIPA VALLEY WATER DISTRICT
("Customer")

and
Sensus USA Inc.
("Sensus")

IN WITNESS WHEREOF, the parties have caused this AMI Agreement ("Agreement") to be executed by their duly authorized representatives as of the day and year written below. The date of the last party to sign is the "Effective Date."

This Agreement shall commence on the Effective Date and continue for/until: 10 Years ("Initial Term"). At the end of the Initial Term, this Agreement shall automatically renew for an additional term of 10 years ("Renewal Term"). The "Term" shall refer to both the Initial Term and the Renewal Term.

This Agreement contains two parts: Part (1) is The FCC Notification for Spectrum Manager Lease, to be filed with the FCC by Sensus on behalf of the Customer and Part (2) is a AMI Agreement between Sensus and Customer. Together, these two parts create the Agreement.

Sensus USA Inc.

By: _____

Name: _____

Title: _____

Date: _____

Customer: YUCAIPA VALLEY WATER DISTRICT

By: _____

Name: _____

Title: _____

Date: _____

Contents of this Agreement:

Part 1: Notification for Spectrum Manager Lease

Part 2: AMI Agreement

Exhibit A Software

Exhibit B Technical Support



Part 1: Notification for Spectrum Manager Lease

In order for Sensus to apply to the FCC on the Customer's behalf for a spectrum manager lease, Customer must complete the information below in boxes one (1) through ten (10) and certify via authorized signature. Customer's signature will indicate that Customer authorizes Sensus to file the spectrum manager lease notification on FCC Form 605 with the Customer as spectrum Lessee, and if Customer does not already have one, ownership disclosure information on FCC Form 602.

1.

Customer/Lessee Name:			
Attention To:		Name of Real Party in Interest:	
Street Address:			City:
State:	Zip:	Phone:	
Fax:		Email:	

Is Customer contact information same as above? Yes No (If No, complete box 2 below)

2.

Additional Customer/Lessee Contact Information

Company Name:			
Attention To:			
Street Address:			City:
State:	Zip:	Phone:	
Fax:		Email:	

3.

Customer/Lessee is a(n) (Select one): Individual | Unincorporated Association | Trust
 Government Entity | Corporation | Limited Liability Company | General Partnership
 Limited Partnership | Limited Liability Partnership | Consortium | Other _____

4.

FCC Form 602: FCC File Number of Customer's Form 602 Ownership Information: _____. If Customer has not filed a Form 602, Sensus will file one for Customer. Please complete questions 5, 6, and 7 below if Customer does not have a Form 602 on file. Customer must complete items 8, 9 and 10 irrespective of whether Customer has an ownership report on file.

5.

Customer Tax ID:

6.

Individual Contact For FCC Matters

Please designate one individual (the Director of Public Works or similar person) who is responsible to the FCC for the operation of the FlexNet radio system.

Name	
Title:	
Email:	Phone:

7.

Ownership Disclosure Information

Please list the names of the Board President and all Board Members below, as well as verify citizenship and ownership interests in any entity regulated by the FCC. Such ownership must be disclosed where a board member member owns 10% or more, directly or indirectly, or has operating control of any entity subject to FCC regulation. If any answer to Ownership question is Yes, or any answer to Citizenship question is No, provide an attachment with further explanation.

	US Citizen?	Ownership Disclosure?
Board President:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Board Member:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Board Member:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Board Member:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Board Member:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No



Board Member:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Board Member:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Board Member:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Board Member:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Board Member:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

8.

Alien Ownership Questions (if the answer is Yes, provide an attachment explaining the circumstances)

1) Is the Customer/Lessee a foreign government or the representative of any foreign government?	<input type="checkbox"/> Yes <input type="checkbox"/> No
---	--

9.

Basic Qualification Information

1) Has the Customer or any party to this application had any FCC station authorization, license, or construction permit revoked or had any application for an initial, modification or renewal of FCC station authorization, license or construction permit denied by the Commission?	<input type="checkbox"/> Yes <input type="checkbox"/> No
2) Has the Customer or any party to this filing, or any party directly or indirectly controlling the Customer or any party to this filing ever been convicted of a felony by any state or federal court?	<input type="checkbox"/> Yes <input type="checkbox"/> No
3) Has any court finally adjudged the Customer or any party directly or indirectly controlling the Customer guilty of unlawfully monopolizing or attempting to unlawfully monopolize radio communication, directly or indirectly, through control of manufacture or sale of radio apparatus, exclusive traffic arrangement, or any other means or unfair methods of competition?	<input type="checkbox"/> Yes <input type="checkbox"/> No

10.

Customer/Lessee Certification Statements

1) The Customer/Lessee agrees that the Lease is not a sale or transfer of the license itself.	<input type="checkbox"/> Yes
2) The Customer/Lessee acknowledges that it is required to comply with the Commission's Rules and Regulations and other applicable law at all times, and if the Customer/Lessee fails to so comply, the Lease may be revoked, cancelled, or terminated by either the Licensee or the Commission.	<input type="checkbox"/> Yes
3) The Customer/Lessee certifies that neither it nor any other party to the Application/Notification is subject to a denial of Federal benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C § 862, because of a conviction for possession or distribution of a controlled substance (See Section 1.2002(b) of the rules, 47 CFR § 1.2002(b), for the definition of "party to the application" as used in this certification.)	<input type="checkbox"/> Yes
4) The Customer/Lessee hereby accepts Commission oversight and enforcement consistent with the license and lease authorization. The Lessee acknowledges that it must cooperate fully with any investigation or inquiry conducted either by the Commission or the Licensee, allow the Commission or the Licensee to conduct on-site inspections of transmission facilities, and suspend operations at the direction of the Commission or the Licensee and to the extent that such suspension of operation would be consistent with applicable Commission policies.	<input type="checkbox"/> Yes
5) The Customer/Lessee acknowledges that in the event an authorization held by a Licensee that has associated with it a spectrum leasing arrangement that is the subject of this filing is revoked, cancelled, terminated, or otherwise ceases to be in effect, the Customer/Lessee will have no continuing authority to use the leased spectrum and will be required to terminate its operations no later than the date on which the Licensee ceases to have any authority to operate under the license, unless otherwise authorized by the Commission.	<input type="checkbox"/> Yes
6) The Customer/Lessee agrees the Lease shall not be assigned to any entity that is not eligible or qualified to enter into a spectrum leasing arrangement under the Commission's Rules and Regulations.	<input type="checkbox"/> Yes
7) The Customer/Lessee waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because of the previous use of the same, whether by spectrum lease or otherwise.	<input type="checkbox"/> Yes
8) The Customer/Lessee certifies that it is not in default on any payment for Commission licenses and that it is not delinquent on any non-tax debt owed to any federal agency.	<input type="checkbox"/> Yes

The Customer/Lessee certifies that all of its statements made in this Application/Notification and in the schedules, exhibits, attachments, or documents incorporated by reference are material, are part of this Application/Notification, and are true, complete, correct, and made in good faith. The Customer/Lessee shall notify Sensus in writing in the event any information supplied on this form changes.

Type or Printed Name of Party Authorized to Sign

First Name:	MI:	Last Name:	Suffix:
Title:		Customer Name:	
Signature:			Date:

FAILURE TO SIGN THIS APPLICATION MAY RESULT IN DISMISSAL OF THE APPLICATION AND FORFEITURE OF ANY FEES PAID.

WILLFUL FALSE STATEMENTS MADE ON THIS FORM OR ANY ATTACHMENTS ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. Code, Title 18, Section 1001) AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. Code, Title 47, Section 312(a)(1)) AND/OR FORFEITURE (U.S. Code Title 47, Section 503).



Part 2: AMI Agreement

1. **Equipment.**
 - A. **Purchase of Equipment.** Customer shall purchase all Field Devices, RF Field Equipment, and other goods (collectively, "Equipment") from Sensus' authorized distributor pursuant to the terms and conditions (including any warranties on such Equipment) agreed by Customer and Sensus' authorized distributor. This Agreement shall not affect any terms and conditions, including any warranty terms, agreed by Customer and Sensus' authorized distributor. If Customer elects to purchase any equipment or services directly from Sensus, or if Customer pays any fees or other costs to Sensus, then Sensus' Terms of Sale shall apply. The "Terms of Sale" are available at: <http://na.sensus.com/TC/TermsConditions.pdf>, or 1-800-METER-IT.
 - B. **THERE ARE NO WARRANTIES IN THIS AGREEMENT, EXPRESS OR IMPLIED. SENSUS EXPRESSLY DISCLAIMS ANY AND ALL REPRESENTATIONS, WARRANTIES AND/OR CONDITIONS, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE, REGARDING ANY MATTER IN CONNECTION WITH THIS AGREEMENT, INCLUDING WITHOUT LIMITATION, WARRANTIES AS TO FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, NON-INFRINGEMENT AND TITLE.**
2. **Services.**
 - A. **Installation of Equipment.** Installation services will be as agreed between the Customer and Sensus' authorized distributor. Sensus will not provide installation services pursuant to this Agreement.
 - B. **Software Implementation.** Sensus shall install and configure the Software on the Server Hardware.
 - C. **IT Systems Integration Services.** Integration of the Software into Customer's new or existing internal IT systems is not included in this Agreement. Any integration work shall be subject to a separate agreement which describes the scope and pricing for such work.
 - D. **Technical Support.** Sensus shall provide Customer the technical support set forth in Exhibit B.
 - E. **Project Management.** Project management of the AMI System is not included in this Agreement. Any project management shall be subject to a separate agreement which describes the scope and pricing for such work.
 - F. **Training.** Training on the use of the AMI System is not included in this Agreement. Any training shall be subject to a separate agreement which describes the scope and pricing for such work.
3. **Software.**
 - A. **Software as a Service (SaaS).** Sensus shall provide Customer with Software as a Service, as defined in Exhibit A, only so long as Customer is current in its payments for such services.
 - B. **UCITA.** To the maximum extent permitted by law, the Parties agree that the Uniform Computer Information Transaction Act as enacted by any state shall not apply, in whole or in part, to this Agreement.
4. **Spectrum**
 - A. **Definitions in this Section 4.** In this Section 4 only, "Sensus" shall mean Sensus USA Inc. and its wholly owned subsidiary, Sensus Spectrum LLC.
 - B. **Spectrum Lease.** Sensus hereby grants to Customer, and Customer accepts, a spectrum manager lease ("Spectrum Lease") over the frequencies of certain FCC license(s) ("FCC License") solely within Customer's Service Territory. (The frequencies of the FCC License within Customer's geographic Service Territory are called the "Leased Spectrum"). Customer shall pay the Ongoing Fees for use of the Leased Spectrum.
 - C. **FCC Forms.** At the Federal Communications Commission (FCC), Sensus will; (1) obtain an FCC Registration Number (FRN) for Customer; (2) submit on behalf of Customer the FCC Form 602 Ownership Disclosure Information if Customer has not already done so; and (3) file a FCC Form 608, notification/application for long-term spectrum manager lease. This Lease becomes effective when the FCC accepts the FCC Form 608.
 - D. **Lease Application.** In order to complete the FCC lease application, Customer will promptly:
 - i. Complete and sign the representations in Part 1 of this Agreement such that Customer demonstrates it qualifies for a spectrum lease under FCC rules. Customer's signature will indicate that Customer authorizes Sensus to; (1) obtain an FRN on behalf of Customer; (2) submit the FCC Form 602 Ownership Disclosure Information on behalf of Customer if Customer has not already done so; and (3) file the spectrum manager lease notification on FCC Form 608 with the Customer as spectrum lessee.
 - ii. Give Sensus the coordinates of the boundaries of Customer's Service Territory or, alternatively, approve Sensus' estimation of the same.
 - iii. If Customer has not already done so, Customer hereby authorizes Sensus to apply on Customer's behalf and obtain for Customer a Federal Registration Number (FRN, the FCC's unique identifier for each licensee) and shall supply Sensus with Customer's Taxpayer Identification Number (TIN).
 - iv. Provide any other information or other cooperation reasonably necessary for the Parties to perform as set forth herein.
 - E. **Permitted Use of Spectrum Lease.** Customer may transmit or receive over the Leased Spectrum only in the Service Territory and only using FlexNet equipment manufactured by Sensus and used in accordance with Sensus' specifications. Customer may use the Leased Spectrum only to read and direct meters in support of Customer's primary utility business or any other operation approved by Sensus in writing. Without limiting the foregoing, Customer is prohibited from reselling, subleasing or sublicensing the Leased Spectrum or from transmitting voice communications over the Leased Spectrum. For each piece of RF Field Equipment used by Customer, Customer shall affix a Sensus-supplied label to the exterior of the RF Field Equipment cabinet or other appropriate visible place to indicate that RF operation is conducted under authority of FCC License(s) issued to Sensus.
 - F. **Term of Spectrum Lease.** Unless terminated earlier (because, for example, Customer stops using the FlexNet equipment or because this Agreement terminates or expires for any reason), this Spectrum Lease will have the same term as the FCC license. If Customer is operating in compliance with this Agreement and is current on any payments owed to Sensus, when the FCC License renews, the Parties will apply to the FCC to renew this Spectrum Lease.
 - G. **Termination of Spectrum Lease.** The Spectrum Lease will terminate: (a) two months after Customer stops transmitting with FlexNet equipment manufactured by Sensus; (b) upon termination, revocation or expiration of the FCC License; (c) upon Customer's breach of this Agreement; or (d) upon termination or expiration of this Agreement for any reason.
 - H. **FCC Compliance.** The following FCC requirements apply
 - i. Pursuant to 47 CFR 1.9040(a):
 - (a) Customer must comply at all times with applicable FCC rules. This Agreement may be revoked by Sensus or the FCC if Customer fails to so comply;
 - (b) If the FCC License is terminated, Customer has no continuing right to use the Leased Spectrum unless otherwise authorized by the FCC;
 - (c) This Agreement is not an assignment, sale or other transfer of the FCC License;
 - (d) This Agreement may not be assigned except upon written consent of Sensus, which consent may be withheld in its discretion; and
 - (e) In any event, Sensus will not consent to an assignment that does not satisfy FCC rules.
 - ii. Referencing 47 CFR 1.9010, Sensus retains de jure and de facto control over the applicable radio facilities, including that,



- (a) Sensus will be responsible for Customer's compliance with FCC policies and rules. Sensus represents and warrants that it has engineered the FlexNet equipment and accompanying software and other programs to comply with FCC rules. Customer will operate the FlexNet equipment subject to Sensus' supervision and control and solely in accordance with Sensus' specifications. Sensus retains the right to inspect Customer's radio operations hereunder and to terminate this Agreement or take any other necessary steps to resolve a violation of FCC rules, including to order Customer to cease transmission. Sensus will act as spectrum manager in assigning spectrum under the FCC License so as to avoid any harmful interference or other violation of FCC rules. Sensus will be responsible for resolving any interference complaints or other FCC rule violations that may arise; and
 - (b) Sensus will file any necessary FCC forms or applications and Customer agrees to reasonably assist Sensus with such filing by providing any necessary information or other cooperation. Sensus will otherwise interact with the FCC with respect to this Agreement, the FCC License or FlexNet equipment.
- I. **Interference.** Customer agrees to report to Sensus promptly, and in no event later than 72 hours afterward, any incident related to the Leased Spectrum, including where Customer experiences harmful interference, receives a complaint or other notice of having caused harmful interference, or receives any type of communication from the FCC or other government agency regarding radio transmission.
5. **General Terms and Conditions.**
- A. **Intentionally Omitted**
- B. **Limitation of Liability.**
- i. Sensus' aggregate liability in any and all causes of action arising under, out of or in relation to this Agreement, its negotiation, performance, breach or termination (collectively "Causes of Action") shall not exceed the greater of: (a) the total amount paid by Customer directly to Sensus under this Agreement; or (b) ten thousand US dollars (USD 10,000.00). This is so whether the Causes of Action are in tort, including, without limitation, negligence or strict liability, in contract, under statute or otherwise. As separate and independent limitations on liability, Sensus' liability shall be limited to direct damages. Sensus shall not be liable for: (i) any indirect, incidental, special or consequential damages; nor (ii) any revenue or profits lost by Customer or its Affiliates from any End User(s), irrespective whether such lost revenue or profits is categorized as direct damages or otherwise; nor (iii) any In/Out Costs; nor (iv) manual meter read costs and expenses; nor (v) claims made by a third party; nor (vi) damages arising from maincase or bottom plate breakage caused by freezing temperatures, water hammer conditions, or excessive water pressure. The limitations on liability set forth in this Agreement are fundamental inducements to Sensus entering into this Agreement. They apply unconditionally and in all respects. They are to be interpreted broadly so as to give Sensus the maximum protection permitted under law.
 - ii. To the maximum extent permitted by law, no Cause of Action may be instituted by Customer against Sensus more than TWELVE (12) MONTHS after the Cause of Action first arose. In the calculation of any damages in any Cause of Action, no damages incurred more than TWELVE (12) MONTHS prior to the filing of the Cause of Action shall be recoverable.
- C. **Termination.** Either party may terminate this Agreement earlier if the other party commits a material breach of this Agreement and such material breach is not cured within forty-five (45) days of written notice by the other party. Upon any expiration or termination of this Agreement, Sensus' and Customer's obligations hereunder shall cease and the software as a service and Spectrum Lease shall immediately cease.
- D. **Force Majeure.** If either party becomes unable, either wholly or in part, by an event of Force Majeure, to fulfill its obligations under this Agreement, the obligations affected by the event of Force Majeure will be suspended during the continuance of that inability. The party affected by the force majeure will take reasonable steps to mitigate the Force Majeure.
- E. **Intellectual Property.** No Intellectual Property is assigned to Customer hereunder. Sensus shall own or continue to own all Intellectual Property used, created, and/or derived in the course of performing this Agreement. To the extent, if any, that any ownership interest in and to such Intellectual Property does not automatically vest in Sensus by virtue of this Agreement or otherwise, and instead vests in Customer, Customer agrees to grant and assign and hereby does grant and assign to Sensus all right, title, and interest that Customer may have in and to such Intellectual Property. Customer agrees not to reverse engineer any Equipment purchased or provided hereunder.
- F. **Confidentiality.** Both parties shall (and shall cause their employees and contractors to) keep all Confidential Information strictly confidential and shall not disclose it to any third party, except to the extent reasonably required to perform and enforce this Agreement or as required under applicable law, court order or regulation. The Confidential Information may be transmitted orally, in writing, electronically or otherwise observed by either party. Notwithstanding the foregoing, "Confidential Information" shall not include: (i) any information that is in the public domain other than due to Recipient's breach of this Agreement; (ii) any information in the possession of the Recipient without restriction prior to disclosure by the Discloser; or (iii) any information independently developed by the Recipient without reliance on the information disclosed hereunder by the Discloser. "Discloser" means either party that discloses Confidential Information, and "Recipient" means either party that receives it.
- G. **Compliance with Laws.** Customer shall comply with all applicable country, federal, state, and local laws and regulations, as set forth at the time of acceptance and as may be amended, changed, or supplemented. Customer shall not take any action, or permit the taking of any action by a third party, which may render Sensus liable for a violation of applicable laws.
 - i. **Export Control Laws.** Customer shall: (i) comply with all applicable U.S. and local laws and regulations governing the use, export, import, re-export, and transfer of products, technology, and services; and (ii) obtain all required authorizations, permits, and licenses. Customer shall immediately notify Sensus, and immediately cease all activities with regards to the applicable transaction, if the Customer knows or has a reasonable suspicion that the equipment, software, or services provided hereunder may be directed to countries in violation of any export control laws. By ordering equipment, software or services, Customer certifies that it is not on any U.S. government export exclusion list.
 - ii. **Anti-Corruption Laws.** Customer shall comply with the United States Foreign Corrupt Practices Act (FCPA), 15 U.S.C. §§ 78dd-1, et seq.; laws and regulations implementing the OECD's Convention on Combating Bribery of Foreign Public Officials in International Business Transactions; the U.N. Convention Against Corruption; the Inter-American Convention Against Corruption; and any other applicable laws and regulations relating to anti-corruption in the Customer's country or any country where performance of this Agreement, or delivery or use of equipment, software or services will occur.
- H. **Non-Waiver of Rights.** A waiver by either party of any breach of this Agreement or the failure or delay of either party to enforce any of the articles or other provisions of this Agreement will not in any way affect, limit or waive that party's right to enforce and compel strict compliance with the same or other articles or provisions.
- I. **Assignment and Sub-contracting.** Either party may assign, transfer or delegate this Agreement without requiring the other party's consent: (i) to an Affiliate; (ii) as part of a merger; or (iii) to a purchaser of all or substantially all of its assets. Apart from the foregoing, neither party may assign, transfer or delegate this Agreement without the prior written consent of the other, which consent shall not be unreasonably withheld. Furthermore, Customer acknowledges Sensus may use subcontractors to perform RF Field Equipment installation, the systems integration work (if applicable), or project management (if applicable), without requiring Customer's consent.
- J. **Amendments.** No alteration, amendment, or other modification shall be binding unless in writing and signed by both Customer and by a vice president (or higher) of Sensus.



- K. **Governing Law and Dispute Resolution.** This Agreement shall be governed by, construed and enforced in accordance with the laws of the State of Delaware. Any and all disputes arising under, out of, or in relation to this Agreement, its negotiation, performance or termination ("**Disputes**") shall first be resolved by the Parties attempting mediation in Delaware. If the Dispute is not resolved within sixty (60) days of the commencement of the mediation, it shall be litigated in the state or federal courts located in Delaware. TO THE MAXIMUM EXTENT PERMITTED BY LAW, THE PARTIES AGREE TO A BENCH TRIAL AND THAT THERE SHALL BE NO JURY IN ANY DISPUTES.
- L. **Restriction on Discovery.** The Parties acknowledge the abundance of documents, data, and other information stored in an electronic manner and the time and costs associated with retrieving relevant electronic data from the Parties during the Discovery portion of a claim. Accordingly, the Parties shall utilize only printed or hard-copy documents, data, and other information in Discovery and shall not use or request electronic or e-Discovery methods for any claim, demand, arbitration or litigation subject to this Agreement. All relevant and unprivileged printed or hard-copy materials shall be subject to Discovery, but neither Party has an obligation to maintain printed or hard-copy files in anticipation of a claim, demand, litigation, or arbitration proceeding.
- M. **Survival.** The provisions of this Agreement that are applicable to circumstances arising after its termination or expiration shall survive such termination or expiration.
- N. **Severability.** In the event any provision of this Agreement is held to be void, unlawful or otherwise unenforceable, that provision will be severed from the remainder of the Agreement and replaced automatically by a provision containing terms as nearly like the void, unlawful, or unenforceable provision as possible; and the Agreement, as so modified, will continue to be in full force and effect.
- O. **Four Corners.** This written Agreement, including all of its exhibits, represents the entire understanding between and obligations of the parties and supersedes all prior understandings, agreements, negotiations, and proposals, whether written or oral, formal or informal between the parties. Any additional writings shall not modify any limitations or remedies provided in the Agreement. There are no other terms or conditions, oral, written, electronic or otherwise. There are no implied obligations. All obligations are specifically set forth in this Agreement. Further, there are no representations that induced this Agreement that are not included in it. The ONLY operative provisions are set forth in writing in this Agreement. Without limiting the generality of the foregoing, no purchase order placed by or on behalf of Customer shall alter any of the terms of this Agreement. The parties agree that such documents are for administrative purposes only, even if they have terms and conditions printed on them and even if and when they are accepted and/or processed by Sensus. Any goods, software or services delivered or provided in anticipation of this Agreement (for e.g., as part of a pilot or because this Agreement has not yet been signed but the parties have begun the deployment) under purchase orders placed prior to the execution of this Agreement are governed by this Agreement upon its execution and it replaces and supersedes any such purchase orders.
- P. **Counterparts.** This Agreement may be executed in any number of counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Additionally, this Agreement may be executed by facsimile or electronic copies, all of which shall be considered an original for all purposes.
6. **Definitions.** As used in this Agreement, the following terms shall have the following meanings:
- A. "**Affiliate**" of a party means any other entity controlling, controlled by, or under common control with such party, where "control" of an entity means the ownership, directly or indirectly, of 50% or more of either: (i) the shares or other equity in such entity; or (ii) the voting rights in such entity.
- B. "**AMI System**" identifies the Sensus FlexNet Advanced Meter Infrastructure System comprised of the SmartPoint Modules, RF Field Equipment, Server Hardware, software licenses, FCC licenses, and other equipment provided to Customer hereunder. The AMI System only includes the foregoing, as provided by Sensus. The AMI System does not include goods, equipment, software, licenses or rights provided by a third party or parties to this Agreement.
- C. "**Confidential Information**" means any and all non-public information of either party, including the terms of this agreement, all technical information about either party's products or services, pricing information, marketing and marketing plans, Customer's End Users' data, AMI System performance, AMI System architecture and design, AMI System software, other business and financial information of either party, and all trade secrets of either party.
- D. "**Echo Transceiver**" identifies the Sensus standalone, mounted relay device that takes the radio frequency readings from the SmartPoint Modules and relays them by radio frequency to the relevant FlexNet Base Station.
- E. "**End User**" means any end user of electricity, water, and/or gas (as applicable) that pays Customer for the consumption of electricity, water, and/or gas, as applicable.
- F. "**Field Devices**" means the meters and SmartPoint Modules.
- G. "**FlexNet Base Station**" identifies the Sensus manufactured device consisting of one transceiver, to be located on a tower that receives readings from the SmartPoint Modules (either directly or via an Echo Transceiver) by radio frequency and passes those readings to the RNI by TCP/IP backhaul communication. For clarity, FlexNet Base Stations include Metro Base Stations.
- H. "**Force Majeure**" means an event beyond a party's reasonable control, including, without limitation, acts of God, hurricane, flood, volcano, tsunami, tornado, storm, tempest, mudslide, vandalism, illegal or unauthorized radio frequency interference, strikes, lockouts, or other industrial disturbances, unavailability of component parts of any goods provided hereunder, acts of public enemies, wars, blockades, insurrections, riots, epidemics, earthquakes, fires, restraints or prohibitions by any court, board, department, commission or agency of the United States or any States, any arrests and restraints, civil disturbances and explosion.
- I. "**Hosted Software**" means those items listed as an Application in Exhibit A.
- J. "**In/Out Costs**" means any costs and expenses incurred by Customer in transporting goods between its warehouse and its End User's premises and any costs and expenses incurred by Customer in installing, uninstalling and removing goods.
- K. "**Intellectual Property**" means patents and patent applications, inventions (whether patentable or not), trademarks, service marks, trade dress, copyrights, trade secrets, know-how, data rights, specifications, drawings, designs, maskwork rights, moral rights, author's rights, and other intellectual property rights, including any derivations and/or derivative works, as may exist now or hereafter come into existence, and all renewals and extensions thereof, regardless of whether any of such rights arise under the laws of the United States or of any other state, country or jurisdiction, any registrations or applications thereof, and all goodwill pertinent thereto.
- L. "**LCM**" identifies the load control modules.
- M. "**Ongoing Fee**" means the annual or monthly fees, as applicable, to be paid by Customer to Sensus' authorized distributor during the Term of this Agreement.
- N. "**Patches**" means patches or other maintenance releases of the Software that correct processing errors and other faults and defects found previous versions of the Software. For clarity, Patches are not Updates or Upgrades.
- O. "**Permitted Use**" means only for reading and analyzing data from Customer's Field Devices in the Service Territory. The Permitted Use does not include reading third party meters or reading meters outside the Service Territory.
- P. "**Release**" means both Updates and Upgrades.
- Q. "**Remote Transceiver**" identifies the Sensus standalone, mounted relay device that takes the radio frequency readings from the SmartPoint Modules and relays them directly to the RNI by TCP/IP backhaul communication.
- R. "**RF Field Equipment**" means, collectively, FlexNet Base Stations, Echo Transceivers and Remote Transceivers.
- S. "**RNI**" identifies the regional network interfaces consisting of hardware and software used to gather, store, and report data collected by the FlexNet Base Stations from the SmartPoint Modules. The RNI hardware specifications will be provided by Sensus upon written request from Customer.
- T. "**RNI Software**" identifies the Sensus proprietary software used in the RNI and any Patches, Updates, and Upgrades that are provided to Customer pursuant to the terms of this Agreement.
- U. "**Service Territory**" identifies the geographic area where Customer provides electricity, water, and/or gas (as applicable) services to End Users as of the Effective Date. This area will be described on the propagation study in the parties' Spectrum Lease filing with the FCC.
- V. "**Server Hardware**" means the RNI hardware.
- W. "**SmartPoint™ Modules**" identifies the Sensus transmission devices installed on devices such as meters, distribution automation equipment and demand/response devices located at Customer's End Users' premises that take the readings of the meters and transmit those readings by radio frequency to the relevant FlexNet Base



- Station, Remote Transceiver or Echo Transceiver.
- X. **"Software"** means all the Sensus proprietary software provided pursuant to this Agreement, and any Patches, Updates, and Upgrades that are provided to Customer pursuant to the terms of this Agreement. The Software does not include any third party software.
 - Y. **"TouchCoupler Unit"** identifies an inductive coupler connection from a water register to the SmartPoint Module.
 - Z. **"Updates"** means releases of the Software that constitute a minor improvement in functionality.
 - AA. **"Upgrades"** means releases of the Software which constitute a significant improvement in functionality or architecture of the Software.
 - BB. **"WAN Backbone"** means the communication link between FlexNet Base Stations and Remote Transceivers and RNL.



**Exhibit A
Software**

Software as a Service

I. Description of Services

This exhibit contains the details of the Software as a Service that Sensus shall provide to Customer if both: (i) pricing for the application of Software as a Service has been provided to the Customer; and (ii) the Customer is current in its payments for such application of Software as a Service.

A. Software as a Service Generally.

Software as a Service is a managed service in which Sensus will be responsible for the day-to-day monitoring, maintenance, management, and supporting of Customer's software applications. In a Software as a Service solution, Sensus owns all components of the solution (server hardware, storage, network equipment, Sensus software, and all third-party software) required to run and operate the application. These software applications consist of the following (each an "Application"):

- Regional Network Interface (RNI) Software
- Sensus Analytics
 - Enhanced Package

The managed application systems consist of the hardware, Sensus Software, and other third-party software that is required to operate the software applications. Each Application will have a production, and Disaster Recovery (as described below) environment. Test environments are not provided unless otherwise specifically agreed by Sensus in writing. Sensus will manage the Applications by providing 24 x 7 x 365 monitoring of the availability and performance of the Applications.

B. Usage License. Subject to all the terms and conditions of this Agreement, Sensus hereby gives Customer a license under Sensus' intellectual property rights to use the Sensus Applications for the Permitted Use for so long as Customer is current in its payments for the Applications ("Usage License"). This Usage License shall commence on the Effective Date and shall terminate upon the earlier of: (i) the expiration or termination of this Agreement for any reason; (ii) if Customer uses the Applications provided hereunder other than for the Permitted Use; and (iii) the Application is terminated as set forth below.

C. Termination of Software as a Service. Customer shall have the option at any time after full deployment but before the end of the Term to terminate any Application by giving Sensus one hundred twenty (120) days prior written notice. Such notice, once delivered to Sensus, is irrevocable. Should Customer elect to terminate any Application, Customer acknowledges that: (a) Customer shall pay all applicable fees, including any unpaid Software as a Service fees; and (b) Software as a Service for such Application shall immediately cease. If Customer elects to terminate the RNI Application in the Software as a Service environment but does not terminate the Agreement generally, then upon delivery of the notice to Sensus, Customer shall purchase the necessary (a) RNI hardware and (b) RNI software license, each at Sensus' then-current pricing. No portion of the Software as a Service fees shall be applied to the purchase of the RNI hardware or software license.

D. "Software as a Service" means only the following services:

- i. Sensus will provide the use of required hardware, located at Sensus' or a third-party's data center facility (as determined by Sensus), that is necessary to operate the Application.
- ii. Sensus will provide production and disaster recovery environments for Application.
- iii. Sensus will provide patches, updates, and upgrades to latest Sensus Hosted Software release.
- iv. Sensus will configure and manage the equipment (server hardware, routers, switches, firewalls, etc.) in the data centers:
 - a. Network addresses and virtual private networks (VPN)
 - b. Standard time source (NTP or GPS)
 - c. Security access points
 - d. Respond to relevant alarms and notifications
- v. Capacity and performance management. Sensus will:
 - a. Monitor capacity and performance of the Application server and software applications 24x7 using KPI metrics, thresholds, and alerts to proactively identify any potential issues related to system capacity and/or performance (i.e. database, backup, logs, message broker storage, etc.)
 - b. If an issue is identified to have a potential impact to the system, Sensus will open an incident ticket and manage the ticket through resolution per Exhibit B, Technical Support.
 - c. Manage and maintain the performance of the server and perform any change or configuration to the server, in accordance to standard configuration and change management policies and procedures.
 - d. Manage and maintain the server storage capacity and performance of the Storage Area Network (SAN), in accordance to standard configuration and change management policies and procedures.
 - e. Exceptions may occur to the system that require Sensus to take immediate action to maintain the system capacity and performance levels, and Sensus has authority to make changes without Customer approval as needed, in accordance to standard configuration and change management policies and procedures.
- vi. Database management. Sensus will:
 - a. Define data retention plan and policy.
 - b. Monitor space and capacity requirements.
 - c. Respond to database alarms and notifications.
 - d. Install database software upgrades and patches.
 - e. Perform routine database maintenance and cleanup of database to improve capacity and performance, such as rebuilding indexes, updating indexes, consistency checks, run SQL query/agent jobs, etc.
- vii. Incident and Problem Management. Sensus will:
 - a. Proactively monitor managed systems (24x7x365) for key events and thresholds to proactively detect and identify incidents.
 - b. Respond to incidents and problems that may occur to the Application(s).
 - c. Maintain policies and procedures for responding to incidents and performing root cause analysis for ongoing problems.
 - d. Correlate incidents and problems where applicable.
 - e. Sensus personnel will use the Salesforce Self Service Portal to document and track incidents.
 - f. In the event that a Sensus personnel is unable to resolve an issue, the issue will be escalated to the appropriate Subject Matter Expert (SME).
 - g. Maintain responsibility for managing incident and problems through resolution and will coordinate with Customer's personnel and/or any required third-party vendor to resolve the issue.



- h. Provide telephone support consistent with Exhibit B, Technical Support in the case of undetected events.
 - vii. Security Management. Sensus will:
 - a. Monitor the physical and cyber security of the server and Application(s) 24x7 to ensure system is highly secure in accordance with NIST Security Standards.
 - b. Perform active intrusion prevention and detection of the data center network and firewalls, and monitor logs and alerts.
 - c. Conduct periodic penetration testing of the network and data center facilities.
 - d. Conduct monthly vulnerability scanning by both internal staff and external vendors.
 - e. Perform Anti-Virus and Malware patch management on all systems.
 - f. Install updates to virus protection software and related files (including Virus signature files and similar files) on all servers from the update being generally available from the anti-virus software provider.
 - g. Respond to any potential threat found on the system and work to eliminate Virus or Malware found.
 - h. Sensus adheres to and submits certification to NERC/CIP Cyber Security standards.
 - i. Sensus actively participates/monitors industry regulation/standards regarding security – NERC, FERC, NIST, OpenSG, etc. through the dedicated Sensus Security team.
 - j. Provide secure web portal access (SSL) to the Application(s).
 - ix. Backup and Disaster Recovery Management. Sensus will:
 - a. Perform daily backups of data providing one (1) year of history for auditing and restoration purposes.
 - b. Back-up and store data (on tapes or other storage media as appropriate) off-site to provide protection against disasters and to meet file recovery needs.
 - c. Conduct incremental and full back-ups to capture data, and changes to data, on the Application(s).
 - d. Sensus will replicate the Application(s) environments to a geographically separated data center location to provide a full disaster recovery environment for the Application production system.
 - e. Provide disaster recovery environment and perform fail-over to DR environment within forty-eight (48) hours of declared event.
 - f. Generate a report following each and any disaster measuring performance against the disaster recovery plan and identification of problem areas and plans for resolution.
 - g. Maintain a disaster recovery plan. In the event of a disaster, Sensus shall provide the services in accordance with the disaster recovery plan.
 - h. In the case of a disaster and loss of access to or use of the Application, Sensus would use commercially reasonable efforts per the Recovery Time Objectives and Recovery Point Objectives specified herein to restore operations at the same location or at a backup location within forty-eight (48) hours.
 - i. The Application shall have a Recovery Time Objective (RTO) of forty-eight (48) hours.
 - j. The Recovery Point Objective (RPO) shall be a full recovery of the Application(s), with an RPO of one (1) hours, using no more than a twenty-four (24) hour old backup. All meter-related data shall be pushed from each Base Station/TGB restoring the database to real-time minus external interfaced systems from the day prior.
 - k. Data from external interfaced systems shall be recreated within a forty-eight (48) hour period with the assistance of Customer personnel and staff, as needed.
- E. Customer Responsibilities:**
- i. Coordinate and schedule any changes submitted by Sensus to the system in accordance with standard configuration and change management procedures.
 - ii. Participate in all required configuration and change management procedures.
 - iii. Customer will log incidents related to the managed Application with Sensus personnel via email, web portal ticket entry, or phone call.
 - iv. Responsible for periodic processing of accounts or readings (i.e. billing files) for Customer's billing system for billing or other analysis purposes.
 - v. Responsible for any field labor to troubleshoot any SmartPoint modules or smart meters in the field in populations that have been previously deployed and accepted.
 - vi. First response labor to troubleshoot FlexNet Base Station, Echo Transceivers, Remote Transceivers or other field network equipment.
 - vii. Responsible for local area network configuration, management, and support.
 - viii. Identify and research problems with meter reads and meter read performance.
 - ix. Create and manage user accounts.
 - x. Customize application configurations.
 - xi. Support application users.
 - xii. Investigate application operational issues (e.g. meter reads, reports, alarms, etc.).
 - xiii. Respond to alarms and notifications.
 - xiv. Perform firmware upgrades over-the-air, or delegate and monitor field personnel for on-site upgrades.
- F. "Software as a Service" does not include any of the following services:**
- i. Parts or labor required to repair damage to any field network equipment that is the result of a Force Majeure event.
 - ii. Any integration between applications, such as Harris MeterSense, would require a Professional Services contract agreement to be scoped, submitted, and agreed in a signed writing between Sensus and all the applicable parties.

If an item is not listed in subparagraphs in item (D) above, such item is excluded from the Software as a Service and is subject to additional pricing.

II. Further Agreements

A. System Uptime Rate

- i. Sensus (or its contractor) shall manage and maintain the Application(s) on computers owned or controlled by Sensus (or its contractors) and shall provide Customer access to the managed Application(s) via internet or point to point connection (i.e., Managed-Access use), according to the terms below. Sensus endeavors to maintain an average System Uptime Rate equal to ninety-nine (99.0) per Month (as defined below). The System Uptime Rate, cumulative across all Applications, shall be calculated as follows:

$$\text{System Uptime Rate} = 100 \times \frac{\text{TMO} - \text{Total Non-Scheduled Downtime minutes in the Month}}{\text{TMO}}$$
- ii. Calculations
 - a. "Targeted Minutes of Operation" or "TMO" means total minutes cumulative across all Applications in the applicable month ("Month") minus the Scheduled Downtime in the Month.



- b. **"Scheduled Downtime"** means the number of minutes during the Month, as measured by Sensus, in which access to any Application is scheduled to be unavailable for use by Customer due to planned system maintenance. Sensus shall provide Customer notice (via email or otherwise) at least seven (7) days in advance of commencement of the Scheduled Downtime.
 - c. **"Non-Scheduled Downtime"** means the number of minutes during the Month, as measured by Sensus, in which access to any Application is unavailable for use by Customer due to reasons other than Scheduled Downtime or the Exceptions, as defined below (e.g., due to a need for unplanned maintenance or repair).
 - i. **Exceptions.** "Exceptions" mean the following events:
 - a. Force Majeure;
 - b. Emergency Work, as defined below, and
 - c. Lack of Internet Availability, as described below.
 - i. **Emergency Work.** In the event that Force Majeure, emergencies, dangerous conditions or other exceptional circumstances arise or continue during TMO, Sensus shall be entitled to take any actions that Sensus, in good faith, determines is necessary or advisable to prevent, remedy, mitigate, or otherwise address actual or potential harm, interruption, loss, threat, security or like concern to any of the Application(s) ("Emergency Work"). Such Emergency Work may include, but is not limited to: analysis, testing, repair, maintenance, re-setting and other servicing of the hardware, cabling, networks, software and other devices, materials and systems through which access to and/or use of the Application(s) by the Customer is made available (the "Managed Systems"). Sensus shall endeavor to provide advance notice of such Emergency Work to Customer when practicable and possible.
 - ii. **Lack of Internet Availability.** Sensus shall not be responsible for any deterioration of performance attributable to latencies in the public internet or point-to-point network connection operated by a third party. Customer expressly acknowledges and agrees that Sensus does not and cannot control the flow of data to or from Sensus' networks and other portions of the internet, and that such flow depends in part on the performance of Internet services provided or controlled by third parties, and that at times, actions or inactions of such third parties can impair or disrupt data transmitted through, and/or Customer's connections to, the Internet or point-to-point data connection (or portions thereof). Although Sensus will use commercially reasonable efforts to take actions Sensus may deem appropriate to mitigate the effects of any such events, Sensus cannot guarantee that such events will not occur. Accordingly, Sensus disclaims any and all liability resulting from or relating to such events.
 - B. **Data Center Site-Security.** Although Sensus may modify such security arrangements without consent or notice to Customer, Customer acknowledges the following are the current arrangements regarding physical access to and support of the primary hardware components of the Managed Systems:
 - i. The computer room(s) in which the hardware is installed is accessible only to authorized individuals.
 - ii. Power infrastructure includes one or more uninterruptible power supply (UPS) devices and diesel generators or other alternative power for back-up electrical power.
 - iii. Air-conditioning facilities (for humidity and temperature controls) are provided in or for such computer room(s) and can be monitored and adjusted for humidity and temperature settings and control. Such air systems are supported by redundant, back-up and/or switch-over environmental units.
 - iv. Such electrical and A/C systems are monitored on an ongoing basis and personnel are available to respond to system emergencies (if any) in real time.
 - v. Dry pipe pre-action fire detection and suppression systems are provided.
 - vi. Data circuits are available via multiple providers and diverse paths, giving access redundancy.
 - C. **Responsibilities of Customer**
 - i. Customer shall promptly pay all Software as a Service fees.
 - ii. Customer may not (i) carelessly, knowingly, intentionally or maliciously threaten, disrupt, harm, abuse or interfere with the Application(s), Managed Systems or any of their functionality, performance, security or integrity, nor attempt to do so; (ii) impersonate any person or entity, including, but not limited to, Sensus, a Sensus employee or another user; or (iii) forge, falsify, disguise or otherwise manipulate any identification information associated with Customer's access to or use of the Application(s).
 - iii. The provisioning, compatibility, operation, security, support, and maintenance of Customer's hardware and software ("Customer's Systems") is exclusively the responsibility of Customer. Customer is also responsible, in particular, for correctly configuring and maintaining (i) the desktop environment used by Customer to access the Application(s) managed by Sensus; and (ii) Customer's network router and firewall, if applicable, to allow data to flow between the Customer's Systems and Sensus' Managed Systems in a secure manner via the public Internet.
 - iv. Upon receiving the system administrator account from Sensus, Customer shall create username and passwords for each of Customer's authorized users and complete the applicable Sensus registration process ("Authorized Users"). Such usernames and passwords will allow Authorized Users to access the Application(s). Customer shall be solely responsible for maintaining the security and confidentiality of each user ID and password pair associated with Customer's account, and Sensus will not be liable for any loss, damage or liability arising from Customer's account or any user ID and password pairs associated with Customer. Customer is fully responsible for all acts and omissions that occur through the use of Customer's account and any user ID and password pairs. Customer agrees (i) not to allow anyone other than the Authorized Users to have any access to, or use of Customer's account or any user ID and password pairs at any time; (ii) to notify Sensus immediately of any actual or suspected unauthorized use of Customer's account or any user ID and password pairs; and (iii) to take the Sensus-recommended steps to log out from and otherwise exit the Application(s) and Managed Systems at the end of each session. Customer agrees that Sensus shall be entitled to rely, without inquiry, on the validity of the user accessing the Application(s) application through Customer's account, account ID, usernames or passwords.
 - v. Customer shall be responsible for the day-to-day operations of the Application(s) and AMI System. This includes, without limitation, (i) researching problems with meter reads and system performance, (ii) creating and managing user accounts, (iii) customizing application configurations, (iv) supporting application users, (v) investigating application operational issues, (vi) responding to alarms and notifications, and (vii) performing over-the-air commands (such as firmware updates or configuration changes).
- III. **Sensus Analytics**
 - A. **Essential Package.** The Essential Package of the Sensus Analytics Application shall consist of the following modules:
 - i. **Device Access**
 - a. Allows search for meter details by using data imported from the Billing system or the Sensus Device ID or AMI ID.
 - b. Allows a view of the meter interval or register reads.
 - c. Meter data is available to be copied, printed, or saved to certain user programs or file formats, specifically CSV, PDF, and Spreadsheet.
 - d. Allows the current and historical data to be viewed.
 - e. Allows the current usage to be compared to historical distribution averages.
 - f. Allows the user to see the meter location on a map view.
 - g. Allows notifications for an event on a single meter to be forwarded to a Customer employee.
 - h. Allows details to be viewed about a meter – (dependent on the data integrated from other systems).
 - ii. **Meter Insight** (provides the following)



- a. # of active meters.
 - b. # of orphaned meters with drill down to the list of meters.
 - c. # of inactive meters with drill down to the list of meters.
 - d. # of stale meters with drill down to the list of meters.
 - e. # of almost stale meters with drill down to the list of meters.
 - f. # of meters where no read is available with drill down to the list of meters.
 - g. # of meters with high threshold exceptions with drill down to the list of meters.
 - h. # of unknown radios with drill down to the list of meters.
- ii. Report Access
- a. Allows the user to see meter alarms and choose a report from a list of standard reports.
 - b. Master Route Register Reads: Shows the latest reads for all meters within specified time window.
 - c. Meter Route Intervals Reads: Allows users to inspect intervals of a single meter over a period of time.
 - d. Master Route No Readings: List all meters that are active in the system, but have not been sending reads within the specified time window.
 - e. Consumption Report: List meters' consumption based on meter readings within the specified time window.
 - f. Zero Consumption for Period: List meters whose readings do not change over a period of time.
 - g. Negative Consumption: Shows the number of occurrences and readings of negative consumption for the last 24hr, 48hr and 72hr from the entered roll up date.
 - h. High Low Exception Report: Displays meters whose reads exceed minimum or/and maximum threshold, within a time range.
 - i. Consumption vs Previous Reported Read: Compares latest reading (from RNI) with last known read received from CIS.
 - j. Consumption Exception 24 hour Report: This report shows meters that satisfy these two conditions: (1) The daily average consumptions exceed entered "daily consumption threshold;" (2) The number of days when daily thresholds are exceeded are greater than the entered "exception per day threshold."
 - k. Endpoint Details: Shows the current state of meters that are created within the specified time range.
 - l. Orphaned Meters: List meters that are marked as 'orphaned', which are created as of entered "Created as of" parameter.
 - m. Billing Request Mismatch: Displays meters in a billing request that have different AMR id with the ones sent by RNI. It also shows AMR id in billing request that have different meter id in the RNI.
 - n. Users need to enter which billing request file prior to running the report.
 - o. Alarms Report: List all alarms occurred during a time window. Users can select which alarm to show.
- iv. Billing Access
- a. Initiate the creation of billing export files formatted to the import needs of the billing system.
 - b. Receive billing request files from the billing system to identify what meters to include in the billing export file in the case where billing request file option is used.
 - c. Provides a repository of past billing files that were either used for billing preparation or actually send to the billing system.
 - d. Will store created billing files for a period of three years unless otherwise denoted.
 - e. The system will allow creation of test files before export to the billing system.
- v. Billing Adaptor
- a. The underlying configurator and tools mapping the extraction of billing data to enable integration to the utility's billing system.
- vi. Data Store
- a. Allows storage of meter reading data including intervals, Registers, and Alarms to be stored.
 - b. Stored data is available online for reports and analysis.
 - c. Data will be retained for 3 years. Additional duration can be purchased.
- B. Enhanced Package. The Enhanced Package shall consist of the modules listed above in the Essential Package, as well as the following additional modules:
- i. Alarm Dashboard
 - a. Allows the user to summarize and filter alarms by a date range.
 - b. Allows the user to review all alarm types on a single screen.
 - c. The user can filter out the alarms not wanted on the screen.
 - d. Alarm totals can be visualized.
 - e. Adds a view of trending alarms over time.
 - f. Click to drill down on an alarm to gain more information on specific events.
 - g. Click to analyze a specific event on a particular device.
 - ii. Alarm Console
 - a. Follow real time monitors of the alarms coming from Customer's meters.
 - b. Provides a single view for all alarms across the entire network.
 - c. Allows the user to view trending of each alarm over time.
 - iii. Alert Manager
 - a. Allows creation of alert groups who will be notified when an alarm occurs.
 - b. Users can manage alert groups by adding and removing group members.
 - c. Allows selection of notification method for how end users in the group will be notified; email or SMS (text message).
 - d. Allows creation of an alert from the available system events from smart points and assign to a group.
 - e. Monitors the systems meters for events. When an event is triggered, all users in the group will be notified.
- D. Integration of Sensus Analytics. Sensus shall provide integration support services to Customer only to the extent specifically provided below:
- i. Sensus shall provide Customer with a simple flat file specification known as VFlex for the integration of the Customer's back office system to the Sensus Analytics modules. This flat file may be delimited or fixed width. This specification allows Customer to transmit each day or as needed: the devices and end users in the system, end user status, end user account information, end user name, and other end user details. When sent to the Sensus FTP servers, this file exchange will enable the system to become operational with the Customer's systems. Customer shall produce this file and transmit it to the FTP location designated by Sensus. Sensus will provide reasonable support to explain to Customer the required vs. optional fields that are in the specification, testing and validation of the file format and content.
 - a. In scope of the included integration efforts is the mapping the Customer's fields to the VFlex specification.
 - b. Out of scope and subject to additional charges will be the transformation of data where business logic including code must be written to modify the field content or format of the data to meet the VFlex specification.
 - ii. Sensus' integration services consists of four (4) hours of assistance (remote or on-site, as determined by Sensus). If additional time is needed to complete the integration efforts, Sensus shall invoice Customer for additional fees on an actual time and materials basis.



- iii. If an item is not listed in subparagraphs (i) or (ii) above, such item is excluded from the integration of Sensus Analytics Support and is subject to additional pricing.
- E. **Data Import.** The Sensus Analytics Application contains adapters for the import of data from: (a) Customer's FlexNet AMI System; and/or (b) AutoRead application for handheld and drive by systems, as applicable.
- F. **Customer Acknowledgements.**
 - i. Customer acknowledges that the Sensus Analytics Application provides up to fifty (50) user logins for Customer's use.
 - ii. Customer acknowledges and agrees the Sensus Analytics Application is based upon the actual number of End Users within Customer's Service Territory. Pricing may increase if Customer's Service Territory or actual number of End Users expands.
 - iii. Customer acknowledges that all data related to the Sensus Analytics Applications is geographically hosted within the United States of America. Customer accepts the geographic location of such hosting, and indemnifies Sensus for any claims resulting therefrom.
 - iv. Customer acknowledges and agrees that the Intellectual Property provisions of this Agreement apply in all respects to Customer's access to and use of the Sensus Analytics Applications.
 - v. Customer is responsible for validating the data analyzed by the Sensus Analytics Applications. Sensus makes no promises of improving Customer's operations or saving Customer money, nor is Sensus liable for any damages resulting from decisions made by Customer related to Customer's use of Sensus Analytics.

IV. Third Party Software.

- A. **RedHat Linux.** If Sensus is providing Customer with a license to use RedHat Linux Software, Customer agrees to the following:
By entering into this Agreement, Customer agrees to abide by and to be legally bound by the terms and conditions of the Red Hat End User License Agreements identified below, each of which are incorporated into this Agreement by reference and are available at the websites identified below. Please read the Red Hat End User License Agreements and incorporated references carefully.

Subscription:	End User License Agreement:
Red Hat Enterprise Linux	http://www.redhat.com/licenses/rh_eula.html
JBoss Enterprise Middleware	http://www.redhat.com/licenses/jboss_eula.html



Exhibit B Technical Support

1. **Introduction**
Sensus Technical Services provides utility customers with a single point of contact for Tier 1 support of technical issues as well as any coordination of additional resources required to resolve the issue. Requests that require specialized skills are to be forwarded to a senior support engineer or Technical Advisor within the team for further analysis. If Technical Services has exhausted all troubleshooting efforts for the product type, the issue will escalate to the Engineering Support Team. Occasionally, on-site troubleshooting/analysis may be required. The preferred order of on-site support is:
 - a) The Customer (for assistance with the easiest and lowest time-consuming activities such as power on/power off).
 - b) The local distributor.
 - c) Sensus employees or contracted personnel, if required to fulfill a contract commitment.
2. **Support Categories**
 - 2.1. General questions regarding functionality, use of product, how-to, and requests for assistance on Sensus AMR, AMI, RF Network Equipment, Metering Products and Sensus Lighting Control.
 - 2.2. Proactive reporting and resolution of problems.
 - 2.3. Reactive reporting to isolate, document, and solve reported hardware/software defects.
 - 2.4. Responding to service requests and product changes.
 - 2.5. Addressing customer inquiries with printed or electronic documentation, examples, or additional explanation/clarification.
3. **Support Hours**
 - 3.1. Standard Support Hours: Toll-free telephone support (1-800-638-3748 option #2) is available Monday thru Friday from 8:00AM EST to 8:00PM EST. After-hours, holiday and weekend support for Severity 1 and Severity 2 issues is available by calling 1-800-638-3748, option #8.
4. **Support Procedures**
 - 4.1. Customer identifies an issue or potential problem and calls Technical Services at 1-800-638-3748 Option #2. The Customer Service Associate or Technical Support Engineer will submit a Support ticket.
 - 4.2. The Customer Service Associate or Technical Support Engineer will identify the caller name and utility by the assigned software serial number, city, and state in which the call originated. The nature of the problem and severity levels will be agreed upon by both parties (either at the time the issue is entered or prior to upgrading or downgrading an existing issue) using the severity definitions below as a guideline. The severity level is then captured into a support ticket for creation and resolution processing. Any time during the processing of this ticket, if the severity level is changed by Sensus, the customer will be updated.
Severity Levels Description:
 - Sev1** Customer's production system is down. The system is unusable resulting in total disruption of work. No workaround is available and requires immediate attention.
Example: Network mass outage, all reading collection devices inoperable, inoperable head end software (e.g., RNI Software, Sensus MDM).
 - Sev2** Major system feature/function failure. Operations are severely restricted; there is a major disruption of work, no acceptable work-around is available, and failure requires immediate attention.
Examples: Network equipment failure (e.g., FlexNet Echo, FlexNet Remote, Base Station transceiver, or VGB); inoperable reading devices (e.g., AR5500, VXU, VGB, or CommandLink); head end software application has important functionality not working and cannot create export file for billing system operations.
 - Sev3** The system is usable and the issue doesn't affect critical overall operation.
Example: Minor network equipment failure (e.g., Echo/Remote false alarms or Base Station transceiver false alarms); head end software application operable but reports are not running properly, modification of view or some non-critical function of the software is not running.
 - Sev4** Minor system issues, questions, new features, or enhancement requests to be corrected in future versions.
Examples: Minor system issues, general questions, and "How-To" questions.
 - 4.3. The Customer Service Associate or Technical Support Engineer identifies whether or not the customer is on support. If the customer is not on support, the customer is advised of the service options as well as any applicable charges that may be billed.
 - 4.4. Calls are placed in a queue from which they are accessible to Technical Support Engineers on a first-come-first-serve basis. A first level Customer Service Associate may assist the customer, depending on the difficulty of the call and the representative's technical knowledge. Technical Support Engineers (Tier 1 support) typically respond/resolve the majority of calls based on their product knowledge and experience. A call history for the particular account is researched to note any existing pattern or if the call is a new report. This research provides the representative a basis and understanding of the account as well as any associated problems and/or resolutions that have been communicated.
 - a. Technical Services confirms that there is an issue or problem that needs further analysis to determine its cause. The following information must be collected: a detailed description of the issue's symptoms, details on the software/hardware product and version, a description of the environment in which the issue arises, and a list of any corrective action already taken.
 - b. Technical Services will check the internal database and product defect tracking system, to see if reports of a similar problem exist, and if any working solutions were provided. If an existing resolution is found that will address the reported issue, it shall be communicated to the customer. Once it is confirmed that the issue has been resolved, the ticket is closed.
 - c. If there is no known defect or support that defines the behavior, Technical Services will work with the customer to reproduce the issue. If the issue can be reproduced, either at the customer site or within support center test lab, Technical Services will escalate the ticket for further investigation / resolution.
If the issue involves units that are considered to be defective with no known reason, the representative will open a Special Investigation RMA through the Support system. If it is determined that a sample is required for further analysis, the customer will be provided with instructions that detail where to send the product sample(s) for a root cause analysis. Once it is determined that the issue cannot be resolved by Tier 1 resources, the ticket will be escalated to Tier 2 support for confirmation/workarounds to resolve immediate issue. Technical Services will immediately contact the customer to advise of the escalation. The response and escalation times are listed in Section 5. At this time, screen shots, log files, configuration files, and database backups will be created and attached to the ticket.



5. **Response and Resolution Targets.**

Sensus Technical Support will make every reasonable effort to meet the following response and resolution targets:

Severity	Standard Target Response	Standard Target Resolution	Resolution (one or more of the following)
1	30 Minutes	Immediately assign trained and qualified Services Staff to correct the error on an expedited basis. Provide ongoing communication on the status of a correction.	<ul style="list-style-type: none"> • Satisfactory workaround is provided. • Program patch is provided. • Fix incorporated into future release. • Fix or workaround incorporated into the Support Knowledge Base.
2	4 hours	Assign trained and qualified Services Staff to correct the error. Provide communication as updates occur.	<ul style="list-style-type: none"> • Satisfactory workaround is provided. • Program patch is provided. • Fix incorporated into future release. • Fix or workaround incorporated into the Support Knowledge Base.
3	1 Business Day	90 business days	<ul style="list-style-type: none"> • Answer to question is provided. • Satisfactory workaround is provided. • Fix or workaround incorporated into the Support Knowledge Base. • Fix incorporated into future release.
4	2 Business Days	12 months	<ul style="list-style-type: none"> • Answer to question is provided. • Fix or workaround incorporated into the Support Knowledge Base.

6. **Problem Escalation Process.**

6.1. If the normal support process does not produce the desired results, or if the severity has changed, the issue may be escalated as follows to a higher level of authority.

6.1.1. Severity 1 issues are escalated by Sales or Technical Services to a Supervisor if not resolved within 2 hours; to the Manager level if not resolved within 4 hours; to the Director level if not resolved within the same business day; and to the VP level if not resolved within 24 hours.

6.1.2. A customer may escalate an issue by calling 1-800-638-3748, Option 2. Please specify the Support ticket number and the reason why the issue is being escalated.

6.1.3. In the event that a customer is not satisfied with the level of support or continual problem with their products, they may escalate a given Support ticket to Manager of Technical Services (1-800-638-3748, Option 2).

7. **General Support Provisions and Exclusions.**

7.1. Sensus provides online documentation for Sensus products through the Sensus User Forum (<http://myfixmetsystem.com/Module/User/Login>). All Sensus customers are provided access to this online database, which includes operation, configuration and technical manuals. Sensus also hosts periodic user group teleconferences to facilitate the interchange of product ideas, product enhancements, and overall customer experiences. The customer shall provide names and email accounts to Sensus so Sensus may provide access to the Portal.

7.2. Specialized support from Sensus is available on a fee basis to address support issues outside the scope of this support plan or if not covered under another specific maintenance contract. For example, specialized systems integration services or out of warranty network equipment repair that is not covered under a separate maintenance contract.

****Spectrum Lease Agreement****

Frequently Asked Questions

Is there any additional cost associated with the spectrum lease?

No. There is no additional cost to you for the spectrum lease. Any amount allocated to the spectrum lease is paid from the ongoing support already being paid by you.

Do I have to complete this spectrum lease agreement annually?

No. The spectrum lease agreement needs completion one time only. So long as the spectrum is being utilized for Sensus equipment, Sensus will renew the lease indefinitely on your behalf.

When does the lease expire?

There is no definitive expiration on your end. Your lease will last as long as Sensus' license does with the FCC, provided you are still using it for Sensus equipment

What is a Customer FRN?

A Customer FRN is an FCC Registration Number. This field can be left blank if it is unknown. An FRN will be issued by the FCC when we file on your behalf for a spectrum manager lease using your Tax ID.

Which Tax ID should I provide?

The FCC needs the nine digit FEIN (Federal Employers Identification Number) to issue an FRN. A tax exempt number cannot be used.

What does "Name of Real Party in Interest" on the form mean?

A "Real Party in Interest" means the legal entity ultimately responsible for your operations. In most cases, there is no other "Real Party in Interest," in which case the box is left blank. Some examples, however, include a parent company or principle shareholder of the leasing party.

Do I need to provide Additional Contact Information (Section 2)?

Not necessarily. Additional contact information is only applicable if it differs from Section 1. If not applicable, this section may be left blank.

What is FCC Form 602 and how do I know if there is an FCC Form 602 on file?

FCC Form 602 is ownership disclosure information for wireless telecommunications services. Unless you know you have previously filed a Form 602, you can safely assume there is not one on file. The ownership disclosure information will be collected in the body of the spectrum lease agreement and Sensus will file the Form 602 on your behalf.

Who should be designated as the Individual Contact for FCC matters?

The individual contact should be someone who can answer questions from the FCC about the use of the spectrum. The Director of Public Works or similar person is typically the most appropriate.

What is needed in the Ownership Disclosure Information Section?

The names of your governing body need to be listed (i.e. each member of your board, council, committee or other governing body). Each member needs to be marked yes or no in the “*US Citizen?*” column. It is atypical, however if any member has ownership interests or operational control exceeding 10% in any entity regulated by the FCC, the box should be marked yes and an explanation must be attached defining the percentage of ownership. If there are no ownership interests exceeding 10% needing to be disclosed, the boxes should be marked no. Individual signatures of governing members are not required.

If we are not a government entity, do we need to complete the ownership disclosure section?

Yes. ***Every*** entity must complete the ownership disclosure section. You may cross out the existing designation and write the appropriate administration of each member (ie: Commission, Council, Superintendent, Manager, etc.).

Do I need to mail a hard copy?

No. Scanned or faxed agreements are perfectly acceptable and preferred for efficiency. Scanned agreements should be emailed to shannon.hearns@sensus.com or faxed to Shannon Hearn at 866-670-8821.

Where do I mail a hard copy requesting full execution and return?

Please mail to the attention of Shannon Hearn at Sensus USA, 8601 Six Forks Rd., Suite 700, Raleigh, NC 27615.

Who can I contact if I need help completing the forms?

Shannon Hearn is more than happy to answer questions and assist in completing the forms. She can be reached via phone at 702 353 9220 or email shannon.hearns@sensus.com.



Date: August 29, 2017
From: Matthew Porras, Management Analyst
Subject: Overview of a Disposal Plan for Surplus Vehicles and Equipment

The District staff has been reviewing concepts for eliminating old, unused equipment, and vehicles. The District staff utilized Ken Porter Auctions from Carson California to assist in this effort and is satisfied with the results from the previous auction where five vehicles were sold for a total of \$16,755 received by the District after fees and transportation costs were deducted.

The attached agreement outlines the details for the sale of additional vehicles and equipment. In summary, the vehicles will be picked up and transported to the auction yard in Carson where the vehicles will be included in an upcoming sale. Ken Porter Auctions will take a 5% commission, yielding the remaining 95% of the sale price to the District. This agreement will remain in effect for future use as the need arises.

The following vehicles and equipment are recommended to be considered surplus and sold as part of the proposed contract:

- Unit 39 – 1988 Ford F-800 Crane Truck
- Unit 16 – 1989 Chevrolet 2 Ton Dump Truck
- Unit 05 – 1998 Ford F-250 Single Cab Pick-Up Truck
- Unit 23 – 1988 Ford F-150 Single Cab Pick-Up Truck
- Unit 359 – 1990 Zieman Tandem Axle Trailer
- Unit 272 – Broderson Hydro-Hammer Trench Compactor



May 15, 2017

Yucaipa Valley Water District

Jesse McCartney

12770 Second Street

Yucaipa CA 92399

Dear: Jesse McCartney

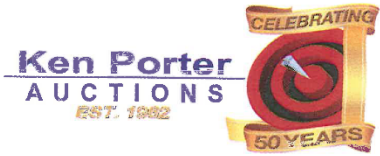
Thank you for the opportunity to submit a Proposal to assist you in the disposal of excess vehicles and equipment. We are pleased to offer the **Yucaipa Valley Water District** the following quotation:

	<u>Commissions</u>	<u>Transportation</u>
Cars, SUV's and Pickup Trucks	5%	\$50 /vehicle
Large Trucks and other vehicles	5%	\$100.00 /vehicle
Office furniture and Miscellaneous items*	25%	\$500.00 /trailer
(Drop-Off & Pick-up of trailer only)		
De-Logo		\$35/vehicle
Drive Cycle		\$60 /vehicle

*The trailer cost is only for drop-off and pick-up. We do not load the trailer on your behalf. We ask that all items loaded be palletized and shrink wrapped with an inventory list included.

There are **NO OTHER FEES OR CHARGES** to you unless you specifically agree to them prior to any auction. We conduct our auctions on the 1st and 3rd Saturday's of each month. We will provide you

21140 S. Avalon Blvd. Carson, CA 90745
 Phone: 310-353-7140 • Fax 310-353-5740
www.kenporterauctions.com • E-mail: infor@kenporterauctions.com



with a detailed summary along with your settlement check within 20 days of the auction. Your permanent records are also available on our website and are accessible by you 24/7/365.

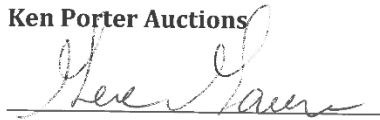
Ken Porter Auctions looks forward to the opportunity of meeting and exceeding your auction needs. If you have any further questions, comments, or concerns, please contact the undersigned at (310) 353-7140.

AGREEMENT:

I/We the Yucaipa Valley Water District agree to the terms set forth in this agreement, signed this

15th day of May 2017 between **Ken Porter Auctions** and the Yucaipa Valley Water District

Any changes, amendments and/or cancellation to this agreement must be in writing and signed no less than 30 days from the effective date.

Ken Porter Auctions


Yucaipa Valley Water District

Gene Govoreau

Jesse McCartney

Date: 5/15/17

Date: _____

Sincerely,

Gene Govoreau
General Manager
Ken Porter Auctions

21140 S. Avalon Blvd. Carson, CA 90745
 Phone: 310-353-7140 • Fax 310-353-5740
www.kenporterauctions.com • E-mail: infor@kenporterauctions.com



May 15, 2017

Jesse McCartney
 Yucaipa Valley Water District
 12770 Second Street
 Yucaipa, CA 92399

Dear Jesse:

Thank you for the opportunity to present Ken Porter Auctions to you. Ken Porter Auctions has delivered "Full-Circle" auction services to Southern California since 1962. We are one of the oldest and most trusted PUBLIC auto auctions in North America, specializing in "Government Agencies" vehicle and equipment disposal.

We are locally owned and deliver personalized services to many agencies in a fully "customizable" format. Regardless of what your vehicle remarketing or miscellaneous disposal needs are, we will deliver. We sell anything from golf carts, cars and trucks, to computers, furniture and office equipment, to yachts, airplanes and helicopters. If you need to convert it to cash, call us.

Everyone is a major customer at Ken Porter Auctions. Whether you need to sell one vehicle or item or hundreds, your business is always important to us.

Ken Porter Auctions offer "One Call Does It All" services for our clients. Here is all you need to do:

- Fax, e-mail, or click the mouse and your Consignment Agreement goes directly to KPA or you can enter your data from our website, it's your choice. Your Consignment Agreement will immediately be entered into our system and given to our In-House Transportation Department or you may choose to delivery your vehicle(s) or item(s) directly to us.
- All current and historical data will be available to you on our secured website, 24 hours a day, 7 days a week, 365 days of the year.
- Your vehicle will be sold at the next scheduled KPA auction.
- A complete and detailed expense breakdown of each vehicle of item sold will accompany your settlement check.

In addition, KPA provides the following:

- Large Public and Dealer attendance at each bi-monthly auction.
- Dynamic website, receiving more than 1,500,000 visits per year.

21140 S. Avalon Blvd. Carson, CA 90745
 PH (310) 353-7140 • Fx (310) 353-5740
www.kenporterauctions.com



- Live and Online Auction giving you local and national buyers
- Convenient access to updated Consignor records via our website.
- Radio, TV, and Newspaper advertising.
- Reconditioning and repair service is available.
- 20,000 plus COLOR brochures mailed out before each sale, plus e-mail blasts.
- Title documentation is completed by our In-House DMV Department. "Special" DMV services are also available.
- Vehicle storage at NO cost to our clients.
- Conveniently located in Carson, CA, near the 110 and 405 freeways.

Our Qualifications

- Ken Porter Auctions is open Monday through Friday, 8:00 am to 5:00 pm and open from 7:00 am to 5:00 pm on the Saturday the auction(s) is/are held,
- Ken Porter Auctions conducts auctions twice a month; the 1st and 3rd Saturday's,
- Ken Porter Auctions has full staff of employees at the auction location at all times,
- Ken Porter Auctions holds all proper and valid Department of Motor Vehicles licenses, Seller's Permit from the State Board of Equalization and none of these licenses have ever been revoked,
- Ken Porter Auctions complies with California Civil Code, Section 1812.600,
- Ken Porter auctions has over 500 auction spaces for vehicles, large and oversized trucks as well as an additional inside storage for vehicles and equipment,
- Ken Porter Auctions is connected to the Department of Motor Vehicles database and can provide a check of registration, Vehicle Identification Numbers (VIN), and provide D M V title searches,
- Ken Porter Auctions provides a Smog Certificate of Compliance on each vehicle.
- Ken Porter Auctions does NOT use any subcontractors related to auction services.

Thank you for the opportunity

A handwritten signature in black ink, appearing to read "Gene Govoreau".

Gene Govoreau
General Manager
Ken Porter Auctions

21140 S. Avalon Blvd. Carson, CA 90745
PH (310) 353-7140 • Fx (310) 353-5740
www.kenporterauctions.com

Unit 39 – 1988 Ford F-800 Crane Truck



Unit 16 – 1989 Chevrolet 2 Ton Dump Truck



Unit 5 – 1998 Ford F-250 Single Cab Pick-Up Truck



Unit 23 – 1988 Ford F-150 Single Cab Pick-Up Truck



Unit 359 – 1990 Zieman Tandem Axle Trailer



Unit 272 – Broderson Hydro-Hammer Trench Compactor



Director Comments



Yucaipa Valley Water District

Adjournment





FACTS ABOUT THE YUCAIPA VALLEY WATER DISTRICT

Service Area Size: 40 square miles (sphere of influence is 68 square miles)

Elevation Change: 3,140 foot elevation change (from 2,044 to 5,184 feet)

Number of Employees: 5 elected board members
62 full time employees

Operating Budget: Water Division - \$13,397,500
Sewer Division - \$11,820,000
Recycled Water Division - \$537,250
Total Annual Budget - \$25,754,750

Number of Services: 12,434 water connections serving 17,179 units
13,559 sewer connections serving 20,519 units
64 recycled water connections

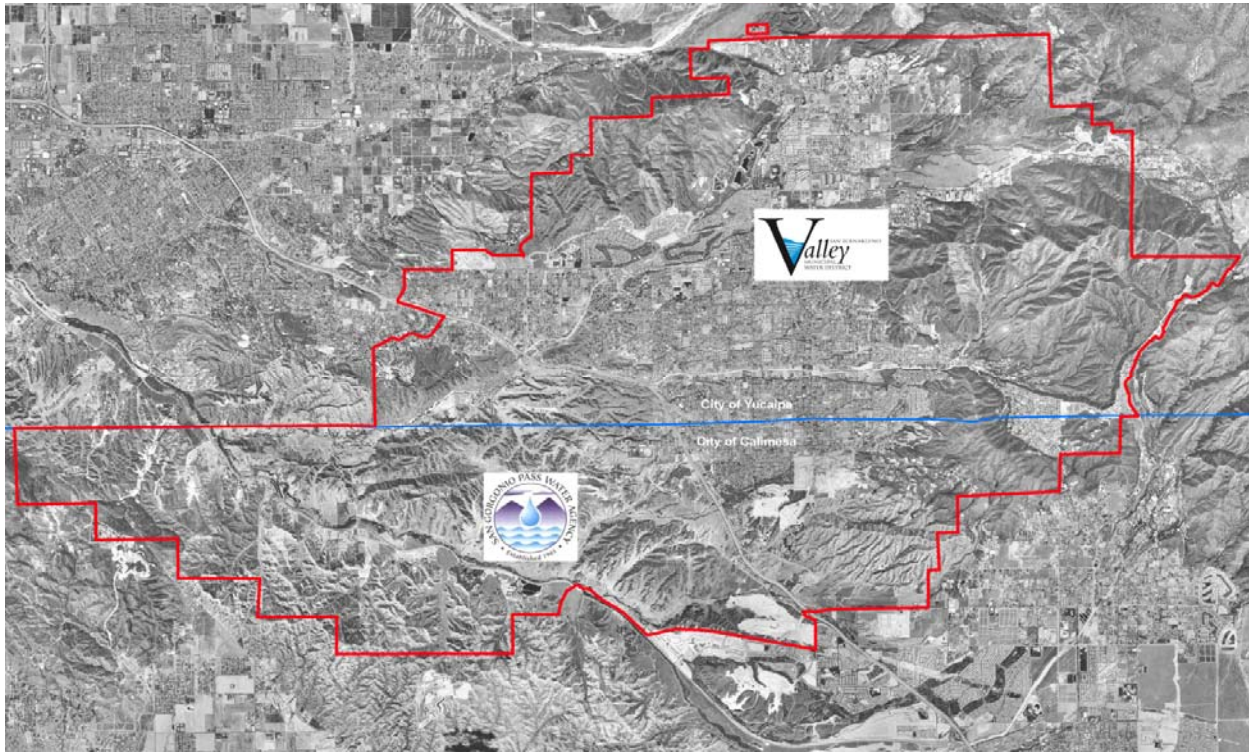
Water System: 215 miles of drinking water pipelines
27 reservoirs - 34 million gallons of storage capacity
18 pressure zones
12,000 ac-ft annual water demand (3.9 billion gallons)
Two water filtration facilities:
- 1 mgd at Oak Glen Surface Water Filtration Facility
- 12 mgd at Yucaipa Valley Regional Water Filtration Facility

Sewer System: 8.0 million gallon treatment capacity - current flow at 4.0 mgd
205 miles of sewer mainlines
5 sewer lift stations
4,500 ac-ft annual recycled water prod. (1.46 billion gallons)

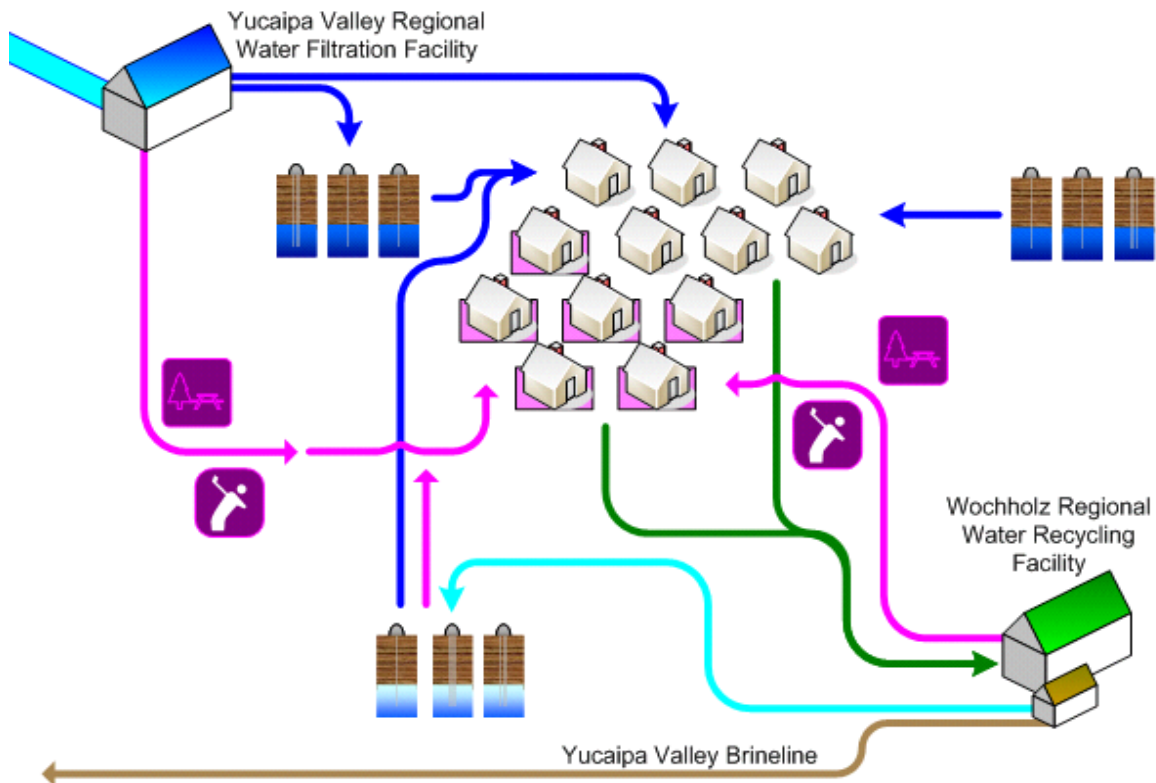
Recycled Water: 22 miles of recycled water pipelines
5 reservoirs - 12 million gallons of storage
1,200 ac-ft annual recycled demand (0.4 billion gallons)

Brine Disposal: 2.2 million gallon desalination facility at sewer treatment plant
1.108 million gallons of Inland Empire Brine Line capacity
0.295 million gallons of treatment capacity in Orange County

State Water Contractors: San Bernardino Valley Municipal Water District
San Geronimo Pass Water Agency



Sustainability Plan: A Strategic Plan for a Sustainable Future: The Integration and Preservation of Resources, adopted on August 20, 2008.





THE MEASUREMENT OF WATER PURITY

One part per hundred is generally represented by the percent (%).
This is equivalent to about fifteen minutes out of one day.

One part per thousand denotes one part per 1000 parts.
This is equivalent to about one and a half minutes out of one day.

One part per million (ppm) denotes one part per 1,000,000 parts.
This is equivalent to about 32 seconds out of a year.

One part per billion (ppb) denotes one part per 1,000,000,000 parts.
This is equivalent to about three seconds out of a century.

One part per trillion (ppt) denotes one part per 1,000,000,000,000 parts.
This is equivalent to about three seconds out of every hundred thousand years.

One part per quadrillion (ppq) denotes one part per 1,000,000,000,000,000 parts.
This is equivalent to about two and a half minutes out of the age of the Earth (4.5 billion years).





GLOSSARY OF COMMONLY USED TERMS

Every profession has specialized terms which generally evolve to facilitate communication between individuals. The routine use of these terms tends to exclude those who are unfamiliar with the particular specialized language of the group. Sometimes jargon can create communication cause difficulties where professionals in related fields use different terms for the same phenomena.

Below are commonly used water terms and abbreviations with commonly used definitions. If there is any discrepancy in definitions, the District's Regulations Governing Water Service is the final and binding definition.

Acre Foot of Water - The volume of water (325,850 gallons, or 43,560 cubic feet) that would cover an area of one acre to a depth of 1 foot.

Activated Sludge Process – A secondary biological sewer treatment process where bacteria reproduce at a high rate with the introduction of excess air or oxygen, and consume dissolved nutrients in the wastewater.

Annual Water Quality Report - The document is prepared annually and provides information on water quality, constituents in the water, compliance with drinking water standards and educational material on tap water. It is also referred to as a Consumer Confidence Report (CCR).

Aquifer - The natural underground area with layers of porous, water-bearing materials (sand, gravel) capable of yielding a supply of water; see Groundwater basin.

Backflow - The reversal of water's normal direction of flow. When water passes through a water meter into a home or business it should not reverse flow back into the water mainline.

Best Management Practices (BMPs) - Methods or techniques found to be the most effective and practical means in achieving an objective. Often used in the context of water conservation.

Biochemical Oxygen Demand (BOD) – The amount of oxygen used when organic matter undergoes decomposition by microorganisms. Testing for BOD is done to assess the amount of organic matter in water.

Biosolids – Biosolids are nutrient rich organic and highly treated solid materials produced by the sewer treatment process. This high-quality product can be used as a soil amendment on farm land or further processed as an earth-like product for commercial and home gardens to improve and maintain fertile soil and stimulate plant growth.

Catch Basin – A chamber usually built at the curb line of a street, which conveys surface water for discharge into a storm sewer.

Capital Improvement Program (CIP) – Projects for repair, rehabilitation, and replacement of assets. Also includes treatment improvements, additional capacity, and projects for the support facilities.

Collector Sewer – The first element of a wastewater collection system used to collect and carry wastewater from one or more building sewer laterals to a main sewer.

Coliform Bacteria – A group of bacteria found in the intestines of humans and other animals, but also occasionally found elsewhere and is generally used as an indicator of sewage pollution.

Combined Sewer Overflow – The portion of flow from a combined sewer system, which discharges into a water body from an outfall located upstream of a wastewater treatment plant, usually during wet weather conditions.

Combined Sewer System– Generally older sewer systems designed to convey both sewage and storm water into one pipe to a wastewater treatment plant.

Conjunctive Use - The coordinated management of surface water and groundwater supplies to maximize the yield of the overall water resource. Active conjunctive use uses artificial recharge, where surface water is intentionally percolated or injected into aquifers for later use. Passive conjunctive use is to simply rely on surface water in wet years and use groundwater in dry years.

Consumer Confidence Report (CCR) - see Annual Water Quality Report.

Cross-Connection - The actual or potential connection between a potable water supply and a non-potable source, where it is possible for a contaminant to enter the drinking water supply.

Disinfection By-Products (DBPs) - The category of compounds formed when disinfectants in water systems react with natural organic matter present in the source water supplies. Different disinfectants produce different types or amounts of disinfection byproducts. Disinfection byproducts for which regulations have been established have been identified in drinking water, including trihalomethanes, haloacetic acids, bromate, and chlorite

Drought - a period of below average rainfall causing water supply shortages.

Dry Weather Flow – Flow in a sanitary sewer during periods of dry weather in which the sanitary sewer is under minimum influence of inflow and infiltration.

Fire Flow - The ability to have a sufficient quantity of water available to the distribution system to be delivered through fire hydrants or private fire sprinkler systems.

Gallons per Capita per Day (GPCD) - A measurement of the average number of gallons of water use by the number of people served each day in a water system. The calculation is made by dividing the total gallons of water used each day by the total number of people using the water system.

Groundwater Basin - An underground body of water or aquifer defined by physical boundaries.

Groundwater Recharge - The process of placing water in an aquifer. Can be a naturally occurring process or artificially enhanced.

Hard Water - Water having a high concentration of minerals, typically calcium and magnesium ions.

Hydrologic Cycle - The process of evaporation of water into the air and its return to earth in the form of precipitation (rain or snow). This process also includes transpiration from plants, percolation into the ground, groundwater movement, and runoff into rivers, streams and the ocean; see Water cycle.

Infiltration – Water other than sewage that enters a sewer system and/or building laterals from the ground through defective pipes, pipe joints, connections, or manholes. Infiltration does not include inflow. See *Inflow*.

Inflow - Water other than sewage that enters a sewer system and building sewer from sources such as roof vents, yard drains, area drains, foundation drains, drains from springs and swampy areas, manhole covers, cross connections between storm drains and sanitary sewers, catch basins, cooling towers, storm waters, surface runoff, street wash waters, or drainage. Inflow does not include infiltration. See *Infiltration*.

Inflow / Infiltration (I/I) – The total quantity of water from both inflow and infiltration.

Mains, Distribution - A network of pipelines that delivers water (drinking water or recycled water) from transmission mains to residential and commercial properties, usually pipe diameters of 4" to 16".

Mains, Transmission - A system of pipelines that deliver water (drinking water or recycled water) from a source of supply the distribution mains, usually pipe diameters of greater than 16".

Meter - A device capable of measuring, in either gallons or cubic feet, a quantity of water delivered by the District to a service connection.

Overdraft - The pumping of water from a groundwater basin or aquifer in excess of the supply flowing into the basin. This pumping results in a depletion of the groundwater in the basin which has a net effect of lowering the levels of water in the aquifer.

Peak Flow – The maximum flow that occurs over a specific length of time (e.g., daily, hourly, instantaneously).

Pipeline - Connected piping that carries water, oil or other liquids. See Mains, Distribution and Mains, Transmission.

Point of Responsibility, Metered Service - The connection point at the outlet side of a water meter where a landowner's responsibility for all conditions, maintenance, repairs, use and replacement of water service facilities begins, and the District's responsibility ends.

Potable Water - Water that is used for human consumption and regulated by the California Department of Public Health.

Pressure Reducing Valve - A device used to reduce the pressure in a domestic water system when the water pressure exceeds desirable levels.

Pump Station - A drinking water or recycled water facility where pumps are used to push water up to a higher elevation or different location.

Reservoir - A water storage facility where water is stored to be used at a later time for peak demands or emergencies such as fire suppression. Drinking water and recycled water systems will typically use concrete or steel reservoirs. The State Water Project system considers lakes, such as Shasta Lake and Folsom Lake to be water storage reservoirs.

Runoff - Water that travels downward over the earth's surface due to the force of gravity. It includes water running in streams as well as over land.

Sanitary Sewer System - Sewer collection system designed to carry sewage, consisting of domestic, commercial, and industrial wastewater. This type of system is not designed nor intended to carry water from rainfall, snowmelt, or groundwater sources. See *Combined Sewer System*.

Sanitary Sewer Overflow – Overflow from a sanitary sewer system caused when total wastewater flow exceeds the capacity of the system. See *Combined Sewer Overflow*.

Santa Ana River Interceptor (SARI) Line – A regional brine line designed to convey 30 million gallons per day of non-reclaimable wastewater from the upper Santa Ana River basin to the sewer treatment plant operated by Orange County Sanitation District.

Secondary Treatment – Biological sewer treatment, particularly the activated-sludge process, where bacteria and other microorganisms consume dissolved nutrients in wastewater.

Supervisory Control and Data Acquisition (SCADA) - A computerized system which provides the ability to remotely monitor and control water system facilities such as reservoirs, pumps and other elements of water delivery.

Service Connection - The water piping system connecting a customer's system with a District water main beginning at the outlet side of the point of responsibility, including all plumbing and equipment located on a parcel required for the District's provision of water service to that parcel.

Sludge – Untreated solid material created by the treatment of sewage.

Smart Irrigation Controller - A device that automatically adjusts the time and frequency which water is applied to landscaping based on real-time weather such as rainfall, wind, temperature and humidity.

Special District - A political subdivision of a state established to provide a public services, such as water supply or sanitation, within a specific geographic area.

Surface Water - Water found in lakes, streams, rivers, oceans or reservoirs behind dams.

Total Suspended Solids (TSS) – The amount of solids floating and in suspension in water or sewage.

Transpiration - The process by which water vapor is released into the atmosphere by living plants.

Trickling Filter – A biological secondary treatment process in which bacteria and other microorganisms, growing as slime on the surface of rocks or plastic media, consume nutrients in primary treated sewage as it trickles over them.

Underground Service Alert (USA) - A free service that notifies utilities such as water, telephone, cable and sewer companies of pending excavations within the area (dial 8-1-1 at least 2 working days before you dig).

Urban Runoff - Water from city streets and domestic properties that typically carries pollutants into the storm drains, rivers, lakes, and oceans.

Valve - A device that regulates, directs or controls the flow of water by opening, closing or partially obstructing various passageways.

Wastewater – Any water that enters the sanitary sewer.

Water Banking - The practice of actively storing or exchanging in-lieu surface water supplies in available groundwater basin storage space for later extraction and use by the storing party or for sale or exchange to a third party. Water may be banked as an independent operation or as part of a conjunctive use program.

Water cycle - The continuous movement water from the earth's surface to the atmosphere and back again; see Hydrologic cycle.

Water Pressure - Pressure created by the weight and elevation of water and/or generated by pumps that deliver water to the tap.

Water Service Line - The pipeline that delivers potable water to a residence or business from the District's water system. Typically the water service line is a 1" to 1½" diameter pipe for residential properties.

Watershed - A region or land area that contributes to the drainage or catchment area above a specific point on a stream or river.

Water Table - The upper surface of the zone of saturation of groundwater in an unconfined aquifer.

Water Transfer - A transaction, in which a holder of a water right or entitlement voluntarily sells/exchanges to a willing buyer the right to use all or a portion of the water under that water right or entitlement.

Water Well - A hole drilled into the ground to tap an underground water aquifer.

Wetlands - Lands which are fully saturated or under water at least part of the year, like seasonal vernal pools or swamps.

Wet Weather Flow – Dry weather flow combined with stormwater introduced into a combined sewer system, and dry weather flow combined with infiltration/inflow into a separate sewer system.





COMMONLY USED ABBREVIATIONS

AQMD	Air Quality Management District
BOD	Biochemical Oxygen Demand
CARB	California Air Resources Board
CCTV	Closed Circuit Television
CWA	Clean Water Act
EIR	Environmental Impact Report
EPA	U.S. Environmental Protection Agency
FOG	Fats, Oils, and Grease
GPD	Gallons per day
MGD	Million gallons per day
O & M	Operations and Maintenance
OSHA	Occupational Safety and Health Administration
POTW	Publicly Owned Treatment Works
PPM	Parts per million
RWQCB	Regional Water Quality Control Board
SARI	Santa Ana River Inceptor
SAWPA	Santa Ana Watershed Project Authority
SBVMWD	San Bernardino Valley Municipal Water District
SCADA	Supervisory Control and Data Acquisition system
SSMP	Sanitary Sewer Management Plan
SSO	Sanitary Sewer Overflow
SWRCB	State Water Resources Control Board
TDS	Total Dissolved Solids
TMDL	Total Maximum Daily Load
TSS	Total Suspended Solids
WDR	Waste Discharge Requirements
YVWD	Yucaipa Valley Water District