PURISSIMA HILLS WATER DISTRICT

REGULAR MEETING OF THE BOARD OF DIRECTORS

6:30 P.M. WEDNESDAY JANUARY 9, 2019

Agenda

6:30 1. CALL TO ORDER, ROLL CALL, AND PLEDGE OF ALLEGIANCE

6:35 2. COMMENTS FROM THE PUBLIC

6:40 3. CONSENT CALENDAR
   Items appearing on the Consent Calendar are considered routine and will be adopted in one motion, except for any item removed for separate consideration elsewhere on the agenda. The President will ask the Board and the audience for requests to remove these items.

   A. APPROVAL OF MINUTES: REGULAR MEETING OF THE BOARD DECEMBER 12, 2018
   B. APPROVAL AND RATIFICATION OF DECEMBER 2018 DISBURSEMENTS PAID IN JANUARY 2019 IN ACCORDANCE WITH RESOLUTION 2013-9 (DISBURSEMENTS SIGNED BY DIRECTOR HOLTZ, PATRICK WALTER, AND RAYLENE COLLINS)
   C. FINANCIAL REPORTS FOR: INCOME AND CAPITAL IMPROVEMENT PLANS DECEMBER 2018 REVENUES AND EXPENDITURES, BALANCE SHEETS

6:45 4. FOLLOW UP ON RECOMMENDATION TO FILL OPEN BOARD SEAT UPDATE

6:50 5. CONSIDER APPROVING PURCHASE OF ECHOCHORE-DX PERMANENT LEAK MONITORING SYSTEM FROM ECHOLOGICS FOR AN AMOUNT NOT TO EXCEED $35,000 DISCUSSION/ACTION

7:00 6. CONSIDER APPROVING PURCHASE OF 2 PAX MIXERS FROM PAX WATER TECHNOLOGIES TO BE INSTALLED AT LA CRESTA T2 AND MCCANN T2 FOR AN AMOUNT NOT TO EXCEED $45,000 DISCUSSION/ACTION

7:15 7. JOINT CAPITAL IMPROVEMENT PROGRAM WITH LOS ALTOS HILLS COUNTY FIRE DISTRICT (LAHCFD) UPDATE

7:20 8. ENGINEER’S REPORT UPDATE

   DISTRICT HYDRAULIC MODEL CALIBRATION UPDATE

7:40 9. APPROVAL FOR MOODY RD. MAIN INSTALLATION NOT TO EXCEED AMOUNT OF $150,000 DISCUSSION/ACTION

7:50 10. ATTORNEY’S REPORT UPDATE
PURISSIMA HILLS WATER DISTRICT
REGULAR MEETING OF THE BOARD OF DIRECTORS
WEDNESDAY JANUARY 9, 2018

7:55  11.  MANAGER’S REPORT           UPDATE/DISCUSSION
   A.  FIELD REPORT
   B.  CUSTOMER COMMUNICATIONS

8:15  12.  DIRECTORS’ REPORT           UPDATE/DISCUSSION
   A.  BAWSCA, ACWA/JPIA, SCVWD, AND OTHER AGENCY ISSUES
   B.  DIRECTORS’ COMMENTS

8:25  13.  AGENDA ITEMS FOR FEBRUARY 13, 2019 BOARD MEETING DISCUSSION

8:30  14.  ADJOURNMENT

ASSISTANCE FOR PERSONS WITH DISABILITIES
In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the District Secretary at 650-948-1217. Notification 48 hours prior to the meeting will enable the District to make reasonable arrangements to ensure accessibility to this meeting.

Copies of all agenda reports and supporting data are available for inspection at the District office, 26375 Fremont Road, Los Altos Hills, Ca. A complete agenda and minutes can also be found on the District’s website: http://www.purissimawater.org.
1. **CALL TO ORDER, ROLL CALL, AND PLEDGE OF ALLEGIANCE** President Jordan called the regular meeting to order at 6:30 p.m. in the District office.

   Directors Present: President Jordan, Directors Peter Evans, Ernie Solomon, and Brian Holtz

   Staff Present: Patrick Walter, General Manager; Phil Witt, Assistant General Manager, Brandon Laurie, Engineer, Pakpour Engineering; Catherine Groves, Attorney, Hanson Bridgett; and Ray Collins, Office Manager/District Secretary

   The Pledge of Allegiance was recited.

2. **COMMENTS FROM THE PUBLIC** None

3. **CONSENT CALENDAR** Item E. Adopt Debt Management Policy was withdrawn from the Consent Calendar. It was moved by Director Evans, seconded by Director Holtz, to approve Items A, B, C, and D of the Consent Calendar. Motion approved unanimously – voice vote.

4. **FINAL AUDIT REPORT AND PRESENTATION OF FY 2017-2018 (DAVID BECKER)** David Becker, Partner of James Marta & Co. discussed the final audit and opinion letter. He concluded that financial results are positive and the District is in a good net position. It was moved by Director Solomon, seconded by Director Jordan, to accept the Final Audit Report for FY 2017-2018. Motion approved unanimously – voice vote.

5. **APPROVAL OF THE THIRD AMENDMENT TO ANTENNA LEASE WITH TOWN OF LOS ALTOS HILLS**. The General Manager provided an update regarding negotiations with the Town. This item will be discussed at the Board’s January 9, 2019 meeting. No action taken.

6. **APPROVAL OF FIRST AMENDMENT TO OPERATIONS CENTER LEASE WITH TOWN OF LOS ALTOS HILLS** No action taken.

7. **RESOLUTION 2018-14 RECOMMENDATION TO FILL OPEN BOARD SEAT** Director Jordan explained that three customers applied for the open Board seat, and all were interviewed. He discussed the reasons for considering Kathleen Knopoff and John Harpootlian as the top two candidates, both being highly qualified, then ultimately selecting Kathleen Knopoff for the reasons outlined in Resolution 2018-14. Resolution 2018-14 and all three of the candidates’ applications will be sent for consideration to Supervisor Simitian, County Board of Supervisors. Supervisor Simitian will make an independent selection. It was moved by Director Solomon, seconded by Director Holtz, to approve Resolution 2018-14. Motion approved unanimously – voice vote.

8. **AUTHORIZE PAKPOUR CONSULTING GROUP TO PROCEED WITH DESIGN WORK FOR THE PAGE MILL ROAD, LA PALOMA, AND ALTAMONT ROAD ZONE 4 WATER MAIN REPLACEMENT PROJECT FOR A NOT TO EXCEED AMOUNT OF $359,000**. This item will be discussed at the Board’s January 9, 2019 meeting. No action taken.
9. ENGINEER’S REPORT

STATUS OF MOODY ROAD MAIN REPLACEMENT DESIGN  The Engineer said the design of the new 563 foot long main between Old Snakey and Moody Springs is nearly complete. He then discussed the Phase I plans with the Board. The goal is to solicit construction bids in January 2019.

TAAFFE/ELENA UPDATE  The Engineer said the survey was done and is being reviewed; design may begin the following week. The Assistant GM commented that he is discussing a plan for traffic management with the Town of Los Altos Hills.

FIRE FLOW MODEL CALIBRATION ZONE 3 & 4.  The Engineer explained the model calibration methodology to the Board and reported Zone 3 was calibrated. Calibration efforts will continue on Zone 4 with additional fire flow testing in the coming week, followed by additional analysis.

The Engineers first field tested flow and pressure at hydrant locations at varying elevations to calibrate Zone 3. By changing the Hazen Williams C factor for the cast iron pipes to 150, the model calibrated within 5% of the zone 3 distribution system. The zone 4 calibration still had errors that would be flowed again on December 18.

10. ATTORNEY’S REPORT  Nothing to Report

11. MANAGER’S REPORT

A. FIELD REPORT  The Assistant General Manager discussed the report:

- **Main Pump Station**  The main starter was delivered and Cupertino Electric will install it.
- **Altamont Pump Station**  Crew installed a low range pressure gauge on the Altamont altitude valve for the Zone 3 flow test with PCG.
- **Backflow Installations.**  Three backflows installed at Foothill College, Stonebrook Ct. and Maple Leaf Ct.
- **Backflow Testing.**  Yearly testing nearly done. Out of approximately 600, only 20 remain.
- **South Fork Ln.**  DACO Construction won the bid on Southfork Lane which was for the installation of approximately 400’ of 8”DIP water main replacement. The driveway had to be lowered for fire truck access resulting in construction of a new water main at a lower elevation. The main is expected to pass all tests and be completed next week.
- **TLAH Emergency Communication.**  The Assistant GM attended an emergency response meeting at the Town of Los Altos Hills council chambers. Many agencies of the local area attended. He will meet with Marsha Hovey, the Town’s Emergency Management consultant, regarding comments from the meeting and specifics for PHWD.
- **Main Breaks**  Possible main break on a cross country main through Seton’s property. The crew is currently doing a pressure check to confirm if it is a District main.

B. CUSTOMER COMMUNICATIONS  The District Secretary reported two items: 1) a customer report of murky water that was caused by the customer’s galvanized pipes; and 2) a report of an illegal use of a hydrant. The GM reported on discussions with customer Chris Taelesmans regarding her claims of damage on her property caused by a leak in a District main.

12. DIRECTORS’ REPORT

A. BAWSCA, ACWA/JPIA, SCVWD, AND OTHER AGENCY ISSUES  Nothing to report
B. DIRECTORS’ COMMENTS Director Jordan reported that NextLevel Networks is installing fiber optics on Fremont Pines and has inquired about locating a cellular backup on one of the District’s tank sites. He mentioned that the grant for leak detection equipment was submitted to the SCVWD.

13. AGENDA ITEMS FOR JANUARY 9, 2018 BOARD MEETING

Board seat appointment follow up
Debt Management Policy
Antenna and Operations leases
Reserve Policy

14. APPOINTMENT OF PRESIDENT AND VICE PRESIDENT OF THE BOARD FOR 2019 It was moved by Director Holtz, seconded by Director Jordan, that Director Evans is appointed President and Director Solomon is appointed Vice President for 2019. Motion approved unanimously – voice vote.

15. ADJOURNMENT The meeting adjourned at 8:52 p.m.
The information below will be incorporated into a comprehensive calibration report which will include an executive summary, purpose, background information, testing methodology, hydraulic model input information, graphs and charts. The purpose of this document is to provide the board with an update.

ZONE 4 CALIBRATION

Zone 4 is the smallest of the District’s three zones with water services, representing approximately 10% of the District’s water usage and therefore was chosen as the first zone to calibrate.

March 15, 2017 – Flow Test. Six locations throughout Zone 4 were flow tested: Buena Vista, Moody Ct, Altamont Circle, Briones Court, Sherlock Rd, and Eshner Court. For this test, the District used a hydrant flushing adapter, manufactured inhouse, to divert flows. The adapter consisted of 2.5” pipe with 2 90-degree bends. Flows were significantly reduced when using this adapter which resulted in the system not being stressed enough to accurately calibrate the model. In addition, there appeared to be discrepancies between the District supplied pressure gauges. Errors upwards of 30% appeared when the field results were compared with the model. It was concluded the flow diversion setup and the pressure gauges were the results of this error and therefor the results were abandoned and a retest was scheduled.

November 27, 2017 – Flow Test. Model calibration was put on hold by the District between March and November 2017 due to staff shortages and other priorities. During this time a “hydrant sock” was ordered which can be installed directly on the diffuser. This diminishes the impact of the flow coming out of the hydrant thereby preventing damage to surrounding areas. The flow sensor was also rebuilt along with purchasing new pressure gauges. The new equipment was used for this test which yielded much higher field flows and more stress on the system. An individual was also stationed at the intersection of Moody and Page Mill Road to monitor the pressure. These results yielded field/model differences of 20% - 80%. Changing the “C” factors for CI (110) and DI (130) to 150 improved results off Buena Vista, Sherlock, and Moody Court however the error at the other locations averaged 18%.

January 18, 2018 – Flow Test. Given the errors between the field and model, a theory was tested that perhaps the error was related to the air release value (ARV) located at the high point along Page Mill Road just downstream from the Page Mill tank. Two different flow tests were conducted at the intersection of Moody and Canyon Roads. The first was with all pipes within Zone 4 open and the second isolating the flow to only Canyon Road, a direct feed cross-country 6-inch cast iron water main from Page Mill Tank. The idea was to determine if the ARV was causing any flow disruptions. The results indicated the ARV did not appear to have an effect on flows. Briones Court, Byrne Park and Eshner Court were also retested and achieved similar results to previous tests.

May 15, 2018 – Flow Test. Briones Court and Buena Vista were tested on the same day as the scheduled Zone 3 calibration test. This time however a pressure gauge was installed on the hydrant at the high point along Page Mill Road, next to the ARV, to observe if there were any losses we were not accounting for. This was to test a theory that perhaps the area was achieving negative pressure and causing a vacuum effect in Zone 4 during the field test by artificially increasing field flows. The pressure gauge indicated positive pressure debunking the theory. Field results were similar to past tests.
December 18, 2018 – Flow Test. The break between May and December was due to shifting calibrating efforts to Zone 3 to determine if that Zone would reflect the same discrepancies observed in Zone 4. This flow test involved isolating the flow for Buena Vista, Altamont Circle, Briones Ct to only feed from Page Mill Rd (close Canyon Rd and any feeds coming into Page Mill from the west). Several people were stationed along the flow route to observe pressure differences between static and residual allowing more data points to pinpoint potential error sources. Upon entering the data into the model, it was discovered one of the District provided pressure gauges was damaged resulting in invalid field results for those areas using that specific gauge.

December 19, 2018 – Flow Test. Those areas in Zone 4 where the faulty gauge was used on December 18, 2018 were retested using confirmed, operable gauges (verified in field by comparing with other similar gauges) resulting in more accurate field data.

Following the flow tests on December 18th and December 19th, the field results were compared with the model by recreating the flow test in the model (isolating the feed to only Page Mill Rd by closing pipes). In addition, the “C” factor for CIP was changed from 110 to 150. This setup and subsequent model modification brought Buena Vista Drive and Altamont Circle field/model comparisons to within 1.5% and 7% respectively. Briones Court however still had an error of 27%. In an effort to reduce the Briones Court error, GIS and As-built information were reviewed in the immediate area of Briones Court and compared with the model to ensure the model reflected the correct pipe sizes, elevations, etc. As-built drawings titled “Upper Blanco-Taaffe Service Extension, March 1965” indicated the water main along Altamont Road between Page Mill Road and Menalto Drive (approximately 280 LF) was in fact an 8” CIP vs a 6” CIP shown both on the GIS map and represented in the model. Incorporating this small change into the model brought Briones Ct to within 1.4% of field results.

Given the favorable comparison results from the December 18th and December 19th tests, modeling was done using the previous field flow results with all pipes open (under normal operating conditions). Field data determined to be the most accurate over the course of the previous tests were used. Modeling confirmed an overall change of the CIP “C” factor from 110 to 150 and the small piping modification along Altamont Road brought favorable field/model comparison results within 2.8% to 9.7% error. The only outlier was at Eshner Ct with a difference of 14.5%. As-built information in the Eshner Ct area was researched however the model matched both the GIS and As-built information.

In addition to the aforementioned changes, pipe sizes, lengths, elevations, and types for the entire zone were verified between the model, field, GIS, and record information available at the time of the calibration. Several changes were made to the model to reflect As-built/GIS conditions.

A hydraulic model is considered calibrated when field vs model runs are within +/- 10% of each other. With all of the above changes the majority of Zone 4 falls within the 10% and is now considered calibrated.

ZONE 3 CALIBRATION

Zone 3 is the largest of the District’s three zones with water services, representing approximately 55% of the District’s water usage and therefore was chosen as the second zone to calibrate.

May 15, 2018 – Flow Test. The flow test began on Briones Way, moving north the east and south for the remaining tests. Unfortunately, a few of the tests were not considered accurate as the fire flow location on Paseo Robles was being flushed simultaneously due to water quality. The tank level at Altamont also became and issue so the tests were concluded early. Four flow locations were used for calibration.
May 18, 2018 – Flow Test. An additional 6 locations were flow tested. This time all tank levels were in normal operational conditions and all test locations could be used for calibration.

May 18, 2018 through December 3, 2018 – Calibration process began (10 locations) and thru initial calibration, it was determined potential losses at Altamont Tank site directly past the altitude vault required verification. Over this time, the District installed a pressure gauge immediately downstream of the altitude vault to allow the observation of any pressure loss during fire flow situations. The installation of the pressure gauge took several months due to several main leaks and the backlog of ordering the part.

November 28, 2018 – Altamont Tank pressure gauge installed.

December 3, 2018 – Flow tested two locations in Zone 3 (Dezahara Way / Adobe Lane) to monitor pressure losses at the Altamont tank site. We observed no pressure loss just downstream of the altitude vault between static and flow conditions. Losses in the model directly adjacent to Altamont Tank (represented by an “equivalent length” pipe) were not as high as actual field results. As a result, the pipe represented by the altitude valve was shortened in the model subsequently improving Zone 3 fire flows overall as there was no longer a low-pressure restriction at the Altamont tank site.

Analyzing the data indicated larger errors in the model the further the test sites were from the tanks. This is typically indicative of the model estimating more friction losses within the pipes than what the field actually experiences. Combining this with District staff stating the old cast iron pipe pulled from the ground in recent repairs has been cement lined and in fairly good condition indicating perhaps the roughness coefficients assigned to the pipes in the model were too aggressive.

Based on the above information, existing pipe roughness factors “C” (110 for CIP and 120/130 for DIP - typical values) were increased over several iterations, resulting in a “C” value of 150 for each pipe type. This change brought the model within 0-5% error for the majority of the zone with a minor exception in the Vogue Court area (9%). Prior to that modification, errors were as high as 53%.

A hydraulic model is considered calibrated when field vs model runs are within +/- 10% of each other. With all of the above changes the majority of Zone 3 falls within the 5% and is now considered calibrated.
Proposal for the Purissima Hills Water District

EchoShore®-DX Leak Monitoring

Prepared for: Patrick Walter
Prepared by: Charlie Fricke
Echologics, LLC
Proposal Number: 42219002
Date: January 2nd, 2019
January 2nd, 2019

Purissima Hills Water District
Attention: Patrick Walter
26375 Fremont Rd.
Los Altos Hills, CA 94022

Re: EchoShore®-DX Permanent Leak Monitoring Service

Dear Patrick,

Echologics is submitting this proposal for a leak monitoring system to serve as a pilot for a yet-to-be determined area in Purissima Hills Water District. The designated deployment of this technology will monitor for leaks on distribution mains and enable the District to determine the benefits of monitoring as well as how to further deploy the technology in other areas of their water distribution system.

EchoShore®-DX is designed to improve service by detecting emerging leaks and preventing damage from catastrophic leaks on surrounding infrastructure. To support easy reliable service, each EchoShore-DX leak monitoring system includes the following features:

1. Leak sensors integrated into a fire hydrant cap that is custom manufactured to match the City of Lakewood design, with zero impacts to customers, fire services, and water operations staff.

2. Each leak monitoring sensor is connected to the water distribution system above ground in a fire hydrant cap. Fire hydrants are a reliable acoustic connection to the water network avoiding the deposits and harsh conditions in valve boxes that degrade performance and accelerate wear out.

3. The patented sensor and signal processing system enables early detection of leaks and quick intervention. Rapid response results in savings from reduced water loss as leaks will be found earlier and further reducing the risk of damage to surrounding infrastructure.

4. Leaks are automatically identified every day. The acoustic sensitivity of the system, combined with advanced signal processing algorithms, minimizes false positive leak warnings.

5. The system data analysis and reporting software is entirely web-based for easy access and improved customer support.

6. Leak nodes feature field replaceable batteries, reducing the overall life cycle system cost.

We look forward to your feedback on the proposed deployment of EchoShore®-DX in the Purissima Hills Water District water system.

Yours truly,

Charlie Fricke
Echologics Regional Manager
cfricke@echologics.com
(702)-280-0789
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1. Project Understanding – Business Case

Purissima Hills Water District wishes to deploy a leak monitoring system on a pilot basis to determine its capability to pinpoint leaks as they first form thereby saving water and reducing the threat of catastrophic water main breaks.

Echologics understands that the District needs to minimize water loss, including minimizing costs associated with lost water, labor costs for water main repairs and customer service disruptions. Customer service disruptions undermine public confidence and can cause significant retail and business losses within the community. Leaks happen anytime, anyplace with unpredictable frequencies, thus requiring constant monitoring.

EchoShore®-DX incorporates the latest generation of acoustic sensors capable of identifying extremely faint acoustical noises emitted by leaks before they become detectable by conventional methods. Echologics integrated leak monitoring sensors directly into a standard fire hydrant cap. Rapid detection capability enables utilities to prioritize repairs based on actual need and the most effective allocation of repair crews.

**ECHOSHORE®-DX PLATFORM - SYSTEM BENEFITS**

- Identify leaks early
- Monitor leak progression
- Prioritize field crew schedules
- Significantly reduce pipe repair costs
- Achieve non-revenue water loss targets
- Minimize service disruptions
2. Echologics Company Background

For more than 150 years, the companies that make up Mueller Water Products have provided products and services to deliver safe, clean drinking water in the United States. Echologics, a division of Mueller, is exclusively focused on providing leak detection and condition assessment solutions to the water industry. Founded in 2004, Echologics’ mission is to provide the water industry with pipeline investigation tools that work from outside the pipe. Through the design of superior equipment and supported by an entrepreneurial, innovative company culture, Echologics has evolved into a full asset management solution provider. Echologics provides proprietary leak detection, condition assessment and non-revenue water management products and services throughout North America and around the world.

Maintaining and upgrading America’s water pipelines is a pressing infrastructure challenge for the next two decades. There are 1.2 million miles of water pipelines in United States. The AWWA estimates a 1 trillion dollar investment in water pipes is required over the next 25 years. New, efficient solutions are needed to leverage limited replacement and rehabilitation budgets and manage infrastructure as it ages. Echologics’ acoustic leak monitoring assessment is an innovative tool to help utilities identify water leaks as they start and prevent damage to nearby infrastructure. In the United States, Echologics has installed fixed leak monitoring networks in water systems located in Washington Suburban Sanitary Commission, New Jersey American Water, San Jose and many others.

The EchoShore-DX system is Echologics latest innovation that pairs best in class leak detection technology with integrated communications and Mueller’s reliable hydrant manufacturing expertise. EchoShore-DX distribution pipe leak monitoring system identifies leaks daily with no changes needed to existing infrastructure or operating procedures. Cost effectively identifying leaks as they form can improve the efficiency of repair crew deployment, reduce damage to other infrastructure caused by pipe breaks, and improve customer service.

![Image of EchoShore-DX system](image)

*Figure 1 EchoShore-DX Sensor Integrated Into a Custom-Made Fire Hydrant Pumper Nozzle Cap – Each hydrant cap leak monitoring sensor is referred to as a “node”*
3. Project Methodology – EchoShore®-DX Leak Monitoring

The EchoShore®-DX automated leak monitoring system integrates acoustic-based leak detection technology from Echologics with integrated communications over an AMI network or the cellular communication network. Both communications solutions are equally effective. This proposal is for a leak monitoring system that uses the cellular network for communication. EchoShore-DX patented, proprietary design is the only above ground, fully autonomous water distribution leak monitoring system currently available on the market.

3.1 EchoShore-DX Leak Detection System

The EchoShore-DX leak monitoring system consists of a network of leak detection sensors referred to as nodes. A node incorporates a cellular communications radio, GPS locator, antenna, acoustic sensor, on-board processor, and a battery power source. Each node is housed in a custom manufactured cast-iron fire hydrant pumper nozzle cap.

EchoShore-DX nodes can be installed on any site by replacing existing fire hydrant pumper nozzle caps with nodes. EchoShore-DX nodes are installed on fire hydrants throughout the service territory at distances required to meet effective coverage. Nodes are typically spaced at an average of 500-900 foot intervals and can detect leaks over a distance of up to 1,100 feet. The EchoShore-DX system scans the monitored area for the presence of leaks daily. EchoShore-DX nodes record acoustic data from the pipelines before generating and wirelessly transmitting recorded sound files over the cellular or radio network to the head-end host software system, which is a cloud-based internet solution.

Leak monitoring system operators can view the locations of leaks and review historic data to determine if immediate repairs need to be made. Detected leaks are easily viewed by water operators through the web user interface. Figure 2 shows an example of the web user interface.

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Figure 2 User Interface: Graphical and visual display of system status on the web user interface
4. EchoShore®- DX Leak Monitoring System Design

Echologics is yet to receive the GIS files that would constitute the scope of the proposed pilot. Once Purissima Hills Water District determines the designated distribution mains to be monitored and provides the respective GIS files, a leak monitoring sensor network map will then be provided. This proposal will be issued with a revision number and updated map to show the placement of the EchoShore-DX nodes.
5. Typical Project Workflow & Leak Detection Monitoring Services

5.1 Typical System Design and Installation Project Workflow

EchoShore®-DX is a distribution pipe leak monitoring system. Part of Echologics success with the EchoShore® platform is collaborating with the operators who manage each unique water distribution network. Informed partners who adopt the EchoShore® system and tailor it for their own operating context are Echologics true success stories. Where possible, the project workflow includes opportunities to share system information & best practices.

Echologics will take the following steps to design and deploy Purissima Hills Water District’s EchoShore®-DX system:

1. Project Planning
Purissima Hills Water District provides the location, diameter, hydrant location and material of pipe network. Echologics will design a leak monitoring sensor network that optimizes the network coverage with the minimum sensors. This step has been substantially completed for this project.

2. Site Inspection
An Echologics Field Specialist will visit the Purissima Hills Water District to ensure that the site conforms with the initial system design. Acoustic testing may be completed on site to verify the design parameters. Final steps needed to tailor the system to the local environment will be taken. Further, the site visit may verify the number and type of each custom fire hydrant pumper cap to be produced.

3. Custom Hardware Creation
On receipt of purchase order Echologics will work with System Design and Installation Project Workflow to manufacture custom caps for each hydrants type and color that is in the project area. A typical hardware design and production timeline is shown in Figure below.

4. Hardware Installation and Commissioning
Echologics Field Specialists will return to install the EchoShore®-DX nodes and complete system commissioning tests.

5. Solution Training
Echologics Field Specialists will provide detailed training to Purissima Hills staff on the use and interpretation of results on the web-based user interface.
Figure 3: Typical EchoShore-DX Installation & Commissioning Timeline
5.2 Echologics Responsibilities

1. Identify appropriate locations for all EchoShore®-DX hardware using guidance from Purissima Hills Water District. Final locations will be approved by the District.
2. Analyze sample hydrant pumper cap & design custom matching hardware.
3. Manufacture & Install leak custom designed monitoring nodes.
4. Set up network communication between the EchoShore®-DX nodes and the head end system integrated with the web user interface.
5. Set up a customized website for the District to monitor for leaks and anomalies on their water network.
6. Make available one Echologics project manager to conduct product hardware, software and service tool training for the District
7. Conduct 1 day of system training to familiarize the District’s operations staff with the leak monitoring operations software interface and system management.

5.3 Purissima Hills Water District Responsibilities

1. Approve and advise installation locations for EchoShore®-DX network hardware.
2. If needed, provide traffic control during installation of network hardware.
3. Approve locations selected by Echologics for EchoShore®-DX nodes and repair hydrants to a working condition if needed.
4. Flow hydrants to support commissioning and testing of the EchoShore®-DX system.
5. Identify one person as a primary user to provide a single channel of communication between Purissima Water District and Echologics.
6. Operate the leak monitoring site when it is live and take appropriate action when leaks are identified.

5.4 Leak Monitoring Options

Echologics offers a core monitoring service and an enhanced service for clients actively pursuing non-revenue water excellence.

Basic License

The Network Operations Center (NOC) constantly monitors and supports the health of Echologics hosted solutions. Basic license includes services provided by the Network Operations Center (NOC) data transfer over the cellular network and core elements of network maintenance for the leak detection web interface including software upgrades and firmware upgrades for the field deployed hardware.
Managed License

The Managed License is an upgraded and enhanced service that includes access to remote support from Echologics leak detection specialists through the Leak Operations Center. This support service can be used for troubleshooting, knowledge sharing, and best practices for use of the EchoShore-DX system and general leak detection approaches that have proven successful in the field. Connecting front line operators with leak detection experts who have conducted hundreds of leak investigations in the field and now manage systems of thousands of leak monitoring sensors daily is a powerful combination that drives system success.

The managed licence option includes all of the support items identified in the basic licence option.
# 6. Scope of Work and Supply

The following is the proposed scope of supply for the Purissima Hills Water District EchoShore-DX leak monitoring system

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Leak Monitoring Nodes</strong></td>
<td>Includes data logger, cellular communication module, leak sensor. Incorporated into a custom pumper nozzle cap for installation on standard fire hydrants. Installation &amp; commissioning included.</td>
<td>30</td>
</tr>
<tr>
<td><strong>Head-End System &amp; Application Software</strong></td>
<td>Cloud-based &amp; Licensed</td>
<td>1</td>
</tr>
<tr>
<td><strong>Project Management</strong></td>
<td>System installation, commissioning, and start-up</td>
<td>Lot</td>
</tr>
<tr>
<td><strong>Project Training</strong></td>
<td>1 Day of Leak Monitoring System Training with Echologics Project Manager</td>
<td>1</td>
</tr>
<tr>
<td><strong>Leak Monitoring Licence</strong></td>
<td>Managed] Leak Monitoring Service</td>
<td>30 endpoints annual recurring</td>
</tr>
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</table>
7. Investment Information

Table 1 outlines the investment information for the proposed EchoShore®-DX leak monitoring system, using a cellular based communications network. Purissima Hills Water District selected the Managed Leak Monitoring Service. EchoShore-DX has a 10-year design life with a 5 year field replaceable battery.

<table>
<thead>
<tr>
<th>Purissima Hills Water District EchoShore-DX Leak Monitoring System</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Equipment Fees</strong></td>
</tr>
<tr>
<td><strong>Item Description</strong></td>
</tr>
<tr>
<td>Installed EchoShore-DX Node</td>
</tr>
<tr>
<td><strong>Equipment Total</strong></td>
</tr>
</tbody>
</table>

| **Monitoring Fees**                                           |
| **Item Description**                                           | **List Price** | **Sale Price** | **Unit** | **Quantity** | **Extended Rate** |
| Managed Leak Monitoring Service                                | $100.00        |                | Per node per year | 30 | $3,000.00        |
| **Monitoring Total**                                          |                |                |          |              | $3,000.00         |

**Total Project Fee First Year** $36,510.00

Battery Replacement

$58.00  Per node  30

The pricing is in United States Dollars and valid for thirty days. Prices do not include any applicable taxes. Product prices are FOB Echologics. The prices listed include onsite system installation. Replacement battery prices quoted are FOB Echologics and do not include installation. Should any civil works or traffic control be required for installation, this would be the responsibility of Purissima Hills Water District.

In case of design modifications please refer to unit pricing in Exhibit B.
8. Future Development

There is currently a drive towards connected devices around the globe. A network of uniquely identifiable devices that communicate have formed the basis of what is known as the Internet of Things (IoT). Driven by increasing connectivity, commoditized sensor technologies, improved analytical tools and cloud – based platforms, IoT is changing global businesses and governments.

Below are common challenges utilities face that can be addressed with data-driven solutions:

- **Aging Infrastructure**

  Traditionally, utilities replaced parts of their water mains or distribution networks without having access to information about the condition of the pipes. In many cases, entire lengths of pipe were in good condition, with only parts of them needing immediate replacement. Gathering actionable data about the water network enables utilities to decide on rehabilitation schedules and the methods used, with focus on intelligent capital and operational expense planning and controls.

- **Aging/Retiring Workforce**

  With the average age of water utility operators currently standing at 55, water utilities face the retirement of a large portion of their workforce in the next 10 to 15 years. Along with the loss of skilled personnel will come the loss of system knowledge accumulated over their careers. IoT technologies will play a critical role in helping to avert this, through the capture, centralization and sharing of data that secure collective utility expertise for future generations of water network operators.

- **Non-Revenue Water Management & Leak Monitoring**

  Utilities face pressure to reduce water losses from both an environmental and financial standpoint. Robust, advanced leak detectors and algorithms enable utilities to differentiate between abnormal consumption (e.g., a running tap or a home pipe break) and leak events in the network. This capability can help prioritize repair needs based on the severity and location of the leak.
9. Master Services Agreement for Proposal# 42219002

This Service Agreement ("Agreement") is entered into by and between Echologics, LLC ("Echo"), having its principal place of business at 1200 Abernathy Rd, Suite 1200, Atlanta, GA 30328 and ____________________, a _______________________ formed under the laws of _____________________ ("Customer") having its principal place of business at __________________________________, and is entered into as of the date of last signature below (the "Effective Date").

This Agreement consists of (i) this signature page, (ii) the Service Agreement Terms and Conditions (including all Exhibits) and (iii) the Services and Services Descriptions Customer has elected to purchase in Attachment A, which are incorporated in this Agreement by this reference.

The parties have caused this Agreement to be duly executed. Each party warrants and represents that its respective signatories whose signatures appear below are on the date of signature authorized to execute this Agreement.

_________________________________________  ____________________________________________
(Customer)  (Echo)

_________________________________________
Authorized Signature  Authorized Signature

_________________________________________
Print Name  Print Name

_________________________________________
Title  Title

_________________________________________
Date  Date
1. **Definitions** are those set out in the Glossary of Terms at the end of the Agreement.

2. **Scope.** This Agreement describes the terms and conditions for (i) purchases by Customer of Services and delivery by Echo of the Services, (ii) the leasing of Equipment and Software and/or (iii) purchases of Equipment.

3. **Leasing Option: Equipment and Software License Fees.** Customer shall pay Echo license fees for the Equipment and Software in the amounts and at the times specified in Exhibit B ("License Fees"). All License Fees payable by Customer to Echo hereunder shall be paid to Echo at the address specified in Exhibit C, or at such other place as Echo may designate in writing to Customer from time to time.

**Purchase Option: Equipment Costs and Software License Fees.** Customer shall pay Echo the amounts specified in Exhibit B ("Purchase Fees"). All Purchase Fees payable by Customer to Echo hereunder shall be paid to Echo at the address specified in Exhibit C, or at such other place as Echo may designate in writing to Customer from time to time. For the avoidance of doubt, all Software is being licensed and not sold to Customer. If Customer selects this purchase option, the terms and conditions specified in Exhibit D shall apply to the sale of the Equipment. In the event of a conflict between the terms and conditions of this Agreement and the terms and conditions specified in Exhibit D, the terms and conditions of Exhibit D shall govern the purchase of the Equipment.

4. **Service Fees.** Customer shall pay Echo the amounts set forth in Exhibit B. All stated amounts are exclusive of any freight, handling and shipping insurance charges, taxes, fees and duties or other amounts. Any taxes related to Services purchased pursuant to this Agreement shall be paid by Customer or Customer shall present an exemption certificate acceptable to the taxing authorities. Applicable taxes shall be billed as a separate item on the invoice, to the extent possible.

**Installation and Set-up Fees.** Installation and set-up fees related to the Equipment and Software shall be as specified in the applicable invoice, purchase order, statement of work or other order form executed by the parties.

5. **Payment.** Unless otherwise agreed upon in writing by the parties hereto, payment terms shall be net thirty (30) days from the date of invoice. All payments shall be made in United States currency. Any sum not paid by Customer when due shall bear interest from the due date until paid at a rate of (i) twelve (12) per cent per annum or (ii) the maximum rate permitted by law, whichever is less.

6. **Invoicing.** Fees for Services, Software and Equipment shall be invoiced in advance of delivery of Services and in accordance with the Equipment and Software schedule in Exhibit B.

7. **Term and Termination.**
   
   (a) The term of this Agreement shall commence on the Effective Date and shall continue for a period of five (_5_) years. Such term will be renewed automatically for successive one (1) year terms unless either party notifies the other of its intent to terminate at least sixty (60) days prior to the expiration of the then current term.

   (b) This Agreement may be terminated immediately by either party upon written notice:

   (i) if the other party breaches any of the material provisions of this Agreement and the breach is not capable of being cured or after providing thirty (30) days written notice to the breaching party if the breaching party fails to cure such breach within such period.

   (ii) if the other party: (i) ceases to carry on business as a going concern; or (ii) becomes or may become the object of the institution of voluntary or involuntary proceedings in bankruptcy or liquidation; or (iii) a receiver or similar officer is appointed with respect to the whole or a substantial part of its assets; or (iv) an event similar to
any of the foregoing occurs under applicable law.

(iii) Either party assigns (by operation of law or otherwise, including merger) or transfers any of the rights or responsibilities granted under this Agreement without the prior written consent of the other party, or in the event of a sale of all or substantially all of such party's assets, or transfer of a controlling interest in such party to an unaffiliated third party. Notwithstanding the above, Echo shall be authorized to transfer or assign any of its rights or responsibilities to an Affiliate of Echo without the consent of Customer.

(c) If Services fees are not paid when due and payment has not been received within thirty (30) days after notice from Echo of such past due payment, Echo may withhold the provision of Services until all amounts past due are paid in full, and/or terminate immediately this Agreement.

(d) All leases and licenses related to the Equipment and Software shall terminate immediately upon termination of the Agreement.

(e) Unless otherwise agreed upon in writing, upon expiration or termination of this Agreement, Customer shall, at Customer's cost, return, or arrange to have returned, the Equipment and Software to Echo no later than sixty (60) days after expiration or termination of this Agreement in good repair, condition and working order, ordinary wear and tear excepted.

(f) Upon termination of the Agreement, Customer shall pay Echo for all work performed hereunder up to the effective date of termination.

8. Confidentiality.

Customer and Echo agree that in connection with this Agreement and their relationship, they may obtain Confidential Information. The receiving party shall at all times keep in trust and confidence all such Confidential Information, and shall not use such Confidential Information other than as expressly authorized by the disclosing party under this Agreement, nor shall the receiving party disclose any such Confidential Information to third parties without the receiving party's written consent. Notwithstanding the above, Echo shall be authorized to disclose Customer’s Confidential Information to contractors or employees of Echo who have a business need to have access to such information. Customer shall immediately return to Echo all Confidential Information (including copies thereof) in the Customer's possession, custody, or control upon termination or expiration at any time and for any reason of this Agreement. The obligations of confidentiality shall not apply to information which (a) has entered the public domain, except where such entry is the result of the receiving party's breach of this Agreement; (b) prior to disclosure hereunder was already rightfully in the receiving party's possession; or (c) subsequent to disclosure hereunder is obtained by the receiving party on a non-confidential basis from a third party who has the right to disclose such information to the receiving party. The receiving party will be authorized to disclose Confidential Information pursuant to a valid order issued by a court or government agency, provided that the receiving party provides (i) prior written notice to the disclosing party of such obligation and (ii) the opportunity to oppose such disclosure. This Agreement shall terminate five (5) years from the date of expiration or termination of this Agreement. Notwithstanding the foregoing, all Confidential Information that is also a “trade secret”, as defined under applicable law, shall not be disclosed by either party for so long as such Confidential Information shall remain a trade secret.

Customer shall not disclose, advertise, or publish the terms and conditions of this Agreement without the prior written consent of Echo. Any press release or publication regarding this Agreement is subject to prior review and written approval of Echo.


ALL SERVICES PROVIDED HEREUNDER SHALL BE PERFORMED IN A WORKMANLIKE MANNER. EXCEPT AS SPECIFIED IN THIS SECTION, ECHO HEREBY DISCLAIMS AND CUSTOMER WAIVES ALL REPRESENTATIONS, CONDITIONS AND WARRANTIES (WHETHER EXPRESS, IMPLIED, OR STATUTORY), INCLUDING WITHOUT LIMITATION, ANY WARRANTY OR CONDITION (A)
OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NONINFRINGEMENT, TITLE, SATISFACTORY QUALITY, QUIET ENJOYMENT, ACCURACY OR (B) ARISING FROM ANY COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE IN THE INDUSTRY.

TO THE EXTENT AN IMPLIED WARRANTY CANNOT BE DISCLAIMED, SUCH WARRANTY IS LIMITED IN DURATION TO THE APPLICABLE EXPRESS WARRANTY PERIOD. CUSTOMER’S SOLE AND EXCLUSIVE REMEDY FOR BREACH OF WARRANTY SHALL BE, AT ECHO’S OPTION, RE-PERFORMANCE OF THE SERVICES OR TERMINATION OF THIS AGREEMENT AND RETURN OF THE PORTION OF THE SERVICE FEES PAID TO ECHO BY CUSTOMER FOR SUCH NON-CONFORMING SERVICES.

Equipment and Software Warranty. Echo warrants that on the date of shipment and for a period of 12 months thereafter (the “Warranty Period”), the Equipment and Software when properly installed and operated, will perform in accordance with the specifications contained in the user documentation and will be free of any material defects in workmanship and material. Equipment and Software may be manufactured using some refurbished components or may have been used internally for reliability or performance testing. Spare parts may be refurbished. In the event that the Equipment and Software do not operate as specified above during the Warranty Period, Customer must notify Echo in writing prior to the expiration of the Warranty Period in order to avail of the remedies contained in this section. Upon receipt of such notification, Echo may repair or replace the Equipment and Software at no additional cost to Customer. If Echo cannot repair the Equipment and Software or replace it with working Equipment and Software, then Echo will refund to Customer any amounts paid by Customer for the Equipment and Software in question. This section contains Customer’s entire rights and Echo’s liability in the event the warranty contained in this section is not fulfilled. EXCEPT AS OTHERWISE STATED HEREIN, CUSTOMER ACKNOWLEDGES THAT THERE ARE NO REPRESENTATIONS OR WARRANTIES CONCERNING THE PHYSICAL AND MECHANICAL CONDITION, SUITABILITY, DURABILITY, MERCHANTABILITY OR FITNESS OF THE EQUIPMENT AND SOFTWARE FOR ANY PURPOSE, WHETHER EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE, INCLUDING WITHOUT LIMITATION, IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY OR FITNESS FOR INTENDED PURPOSE OR THAT THE EQUIPMENT AND SOFTWARE OR DOCUMENTATION WILL MEET CUSTOMER’S NEEDS OR WILL BE AVAILABLE FOR USE AT ANY PARTICULAR TIME OR WILL BE ERROR FREE.

10. Limitation of Liability and Consequential Damages Waiver.

ALL LIABILITY OF ECHO, ITS AFFILIATES, OFFICERS, DIRECTORS, EMPLOYEES, AGENTS AND SUPPLIERS COLLECTIVELY FOR CLAIMS ARISING UNDER THIS AGREEMENT OR OTHERWISE HOWSOEVER ARISING SHALL BE LIMITED TO THE GREATER OF (I) THE MONEY PAID TO ECHO FOR SERVICES UNDER THIS AGREEMENT DURING THE SIX (6) MONTH PERIOD PRECEDING THE EVENT OR CIRCUMSTANCES FIRST GIVING RISE TO SUCH LIABILITY OR (II) ONE HUNDRED THOUSAND ($100,000) US DOLLARS. THIS LIMITATION OF LIABILITY IS CUMULATIVE AND NOT PER-INCIDENT.

SUBJECT TO CUSTOMER’S BREACH OF SECTION 11 (LICENSE), IN NO EVENT SHALL EITHER PARTY, ITS RESPECTIVE AFFILIATES, OFFICERS, DIRECTORS, EMPLOYEES, AGENTS OR SUPPLIERS BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES, OR LOST REVENUE, LOST PROFITS, OR LOST OR DAMAGED DATA, WHETHER ARISING IN CONTRACT, TORT (INCLUDING NEGLIGENCE), OR OTHERWISE, EVEN IF SUCH PARTY HAS BEEN INFORMED OF THE POSSIBILITY THEREOF.

11. License.

Echo grants to Customer a limited, nonsublicenseable, nonexclusive and nontransferable license to access and use for Customer’s internal business use Equipment and Software provided as a result of or in relation to the Services. Customer agrees that it is licensed to use Software only on and with Equipment covered under this Agreement and solely in the conduct of its internal business, in a manner and for the use contemplated by the manufacturer thereof, and in compliance with all laws, rules and regulations of every governmental authority having jurisdiction over the Equipment, Software or Customer. The license in this paragraph is
valid until the earlier of: (i) the expiration or termination of this Agreement; or (ii) Echo’s request to Customer that the Equipment and Software be returned to Echo. All rights not expressly provided to Customer by Echo herein are expressly reserved by Echo.

Except as expressly authorized, Customer shall not (and shall not permit a third party to) download more than one copy of the Software, copy, in whole or in part, any Software, make error corrections or otherwise modify, decompile, decrypt, reverse engineer, disassemble or otherwise reduce all or any portion of any Software to human-readable form, or transfer, sublicense, rent, lease, distribute, sell, or create derivative works of any Software.

Customer acknowledges that the Equipment and Software may contain and Echo may use in the performance of the Services and other obligations hereunder know-how, intellectual property, methodologies, processes, technologies, algorithms, development tools, data, modules, components, designs, utilities, subsets, objects, program listings, models, programs, systems, analysis frameworks, leading practices, specifications, inventions, original works of authorship, developments, improvements, and trade secrets owned by Echo (“Echo IP”). In consideration included herein, Customer agrees not to provide any third party access to Echo IP.

Customer shall be solely responsible, at its own expense, for (a) the delivery of the Equipment and Software to Customer, such delivery method being subject to Echo’s sole discretion, (b) the packing, rigging and delivery of the Equipment and Software back to Echo, upon expiration or termination of this Agreement, in good repair, condition and working order, ordinary wear and tear excepted, and (c) the de-installation, maintenance and repair of the Equipment and Software. Customer shall, at its expense, keep the Equipment and Software in good repair, condition and working order, ordinary wear and tear excepted. If any of the Equipment, upon its return to Echo, is not in good repair, condition and working order, ordinary wear and tear excepted, Customer shall be obligated to pay Echo for the out-of-pocket expenses Echo incurs in bringing such Equipment and Software up to such status; provided, however, if such Equipment and Software cannot be repaired, Customer shall pay the applicable replacement cost. Echo shall be entitled to inspect the Equipment and Software at reasonable times.


Echo shall at all times retain all right, title and interest in and to all pre-existing Intellectual Property owned by Echo as of the Effective Date and all Intellectual Property in and to the Services, Echo Equipment and Software, or other Intellectual Property provided or developed by Echo or a third party on Echo’s behalf, including improvements, enhancements and derivative works made therefrom or created, developed or discovered pursuant to this Agreement. Except as expressly provided herein, Echologics expressly reserves all rights, title and interest in the Equipment, Software, Services and related intellectual property. Customer shall at all times retain all right, title and interest in and to all pre-existing Intellectual Property owned by Customer as of the Effective Date.

Echo agrees that the Deliverables shall be the sole property of Customer. Customer hereby grants Echo a worldwide, perpetual, nonexclusive, royalty-free, fully paid-up right and license to use the Deliverables. Echo makes no express or implied representation or warranty that the Services, Equipment and/or Software will not infringe any third party patent, copyright or other intellectual property rights. Customer acknowledges the great value of goodwill associated with the name and trademarks of Echo, and the identification of the Services, Equipment and/or Software therewith. Customer will not obscure, effect or permit the removal or alteration of any trademarks, copyright notices, patent numbers, serial numbers or the like affixed to any Services, Equipment and/or Software.


Except for the obligation to pay monies due and owing, neither party shall be liable for any delay or failure in performance due to events outside the defaulting party’s reasonable control, including without limitation acts of God, earthquake, labor disputes, industry wide shortages of supplies, actions of governmental entities, riots, war, terrorism, fire, epidemics, or delays of common carriers or other circumstances beyond its reasonable control. The obligations and rights of the defaulting party will be
extended for a period equal to the time during which the event prevented the party’s performance.

14. **Applicable law and Jurisdiction.**

In the event that Buyer is located in Canada, these Terms will be governed by and construed in accordance with the laws of the Province of Ontario and the laws of Canada applicable in Ontario, and will be treated, in all respects, as an Ontario contract. In the event that Buyer is located in Australia or New Zealand, these Terms will be governed by and construed in accordance with the laws in force in the State of New South Wales. In the event that Buyer is located in Europe, these Terms will be governed by and construed in accordance with the laws in force in The Netherlands. In the event that Buyer is located in the United States or any other part of the world other than Canada, Europe or Australia/New Zealand, these Terms will be governed by and construed in accordance with the laws of the State of Georgia. The parties agree to submit to the jurisdiction of the courts of (a) the Province of Ontario (in cases where the Buyer is located in Canada), (b) the State of New South Wales (in cases where the Buyer is located in Australia or New Zealand), (c) The Netherlands (in cases where the Buyer is located in Europe and (d) the federal court in the State of Georgia (in cases where the Buyer is located in the United States or any other part of the world other than Canada, Europe or Australia/New Zealand), and in each case waive any objection relating to improper venue or forum non conveniens to the conduct of any proceeding in any such court.

15. **Export Control.** Customer shall comply with such laws and regulations governing use, export, re-export, and transfer of Echo Services, Equipment and/or Software and will obtain all required authorizations, permits, or licenses.

16. **Assignment.** Neither party may assign, by operation of law or otherwise, or delegate its rights or obligations under this Agreement. Any purported assignment shall be null and void. Notwithstanding the above, Echo shall be authorized to transfer or assign any of its rights or responsibilities to an Affiliate of Echo without the consent of Customer.

17. **Notices.** All notices required or permitted under this Agreement will be in writing and will be deemed given one day after deposit with a commercial express courier specifying next day delivery (or two (2) days for international courier packages specifying 2-day delivery), with written verification of receipt. All communications will be sent to the addresses set forth on the cover sheet of this Agreement or such other address as may be designated by a party by giving written notice to the other party pursuant to this paragraph.

18. **Entire Agreement.** This Agreement is the complete agreement between the parties concerning the subject matter of this Agreement and replaces any prior oral or written communications between the parties, except as agreed between the parties. There are no conditions, understandings, agreements, representations, or warranties expressed or implied, that are not specified herein. This Agreement may only be modified by a written document executed by the parties hereto.

19. **No Waiver.** The waiver by either party of any right provided under this Agreement shall not constitute a subsequent or continuing waiver of such right or of any other right under this Agreement.

20. **Severability.** In the event that one or more terms of this Agreement becomes or is declared to be illegal or otherwise unenforceable by any court of competent jurisdiction, each such term shall be null and void and shall be deemed deleted from this Agreement. All remaining terms of this Agreement shall remain in full force and effect.

21. **Survival.** Sections 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 177, 18, 19, 20, and 21.

[End of Document]
9.1 EXHIBIT A GLOSSARY OF TERMS

**Affiliate** means a Person that, directly or indirectly, controls, is controlled by or is under common control with the first Person.

**Confidential Information** means proprietary and confidential Information received by Echo or Customer in connection with the Agreement and their relationship. Such Confidential Information may include, but is not limited to, trade secrets, know how, inventions, techniques, processes, programs, schematics, Software source documents, data, customer lists, financial information, and sales and marketing plans or information which the receiving party knows or has reason to know is confidential, proprietary or trade secret information of the disclosing party.

**Deliverable** means the reports and tangible items delivered by Echo to Customer as specified in writing and agreed upon by the parties hereto.

**Equipment** means tangible equipment, devices, or components licensed to Customer by Echo in relation to the Services.

**Intellectual Property** means any and all tangible and intangible: (i) rights associated with works of authorship throughout the world, including but not limited to copyrights, neighboring rights, moral rights, and mask works, and all derivative works thereof, (ii) trademark and trade name rights and similar rights, (iii) trade secret rights, (iv) patents, designs, algorithms and other industrial property rights, (v) all other intellectual and industrial property rights (of every kind and nature throughout the world and however designated) whether arising by operation of law, contract, license, or otherwise, and (vi) all registrations, initial applications, renewals, extensions, continuations, divisions or reissues thereof now or hereafter in force (including any rights in any of the foregoing).

**Person** means an individual, partnership, corporation, business trust, joint stock company, estate, trust, unincorporated association, joint venture, governmental authority or any other entity of whatever nature.

**Services** means one or more of the services selected by the Customer and identified in Attachment A.

**Services Descriptions** mean the detailed descriptions of the Services purchased by Customer which are incorporated in the MSA by reference and attached in Attachment A.

**Software** means the software programs licensed to Customer by Echo for use with the Equipment.
9.2 EXHIBIT B

Equipment / Software / Fees

*Please refer to Section 7 Investment Information.*
9.3 Exhibit C

Payment Remittance

Mail payments by cheque to:
Echologics, LLC
23418 Network Place
Chicago, IL 60673-1234

E-mail wire transfer remittance advices to:
Finance@echologics.com

Wire instruction:
Bank Name: JP Morgan Chase
Address: 1 Chase Manhattan Plaza
New York, NY 10005
R/T # 021 000 021
Swift code: CHASUS33 AC # 716486022
ACH Payment: R/T #071 000 013
9.4 EXHIBIT D

Terms and Conditions of Sale

Controlling Provisions: Echologics’ Terms & Conditions of Sale (these “Terms”) will govern all sales of Echologics’ products, including products, equipment, and parts manufactured or sold by Echologics (together, “Products”) to Buyer (this “Order”). These Terms supersede any prior written or oral agreement understanding, representation or promise, and any pre-printed or standard terms and conditions contained in Buyer’s request for quote, purchase order, invoice, order acknowledgement or similar document. These Terms may not be amended, supplemented, changed or modified except by concurrent or subsequent written agreement, signed by an authorized representative of Echologics and Buyer. Echologics’ acknowledgement of Buyer’s purchase order will not constitute acceptance of any terms and conditions contained therein, regardless of how such terms and conditions may be prefaced or described.

Prices and Designs: Prices and designs are subject to change without notice. All prices are F.O.B Point-of-Shipment, unless otherwise stated.

Shipments: All Products sent out by Echologics will be carefully examined, counted and packed. The cost of any special packing or special handling caused by Buyer’s requirements or requests will be added to the price of the Order. No claim for shortages will be allowed, unless made in writing within 10 days of receipt of shipment. Claims for goods damaged or lost in transit should be made on the carrier, as Echologics’ responsibility ceases on delivery to the carrier.

Delivery: Echologics will use its commercially reasonable efforts to complete shipment as indicated. In the event Buyer requests a delay or suspension in completion and/or shipment of Products or any part thereof for any reason, the parties will agree upon any cost and/or scheduling impact of such delay and allocate such costs to Buyer's account. Any delay beyond 30 days after original scheduled shipment date will require Buyer to take title and risk of loss of such Products and make arrangements for storage. Echologics’ invoice will be issued upon Echologics’ readiness to ship Products. Echologics will select the method of shipment and the carrier to be used to deliver Products, unless otherwise agreed. Unless otherwise agreed, shipment will be FCA (Incoterms 2000) Echologics’ designated shipping point (currently Decatur, IL, except for shipments made in Canada which are shipped from Toronto, Ontario). Echologics will not be responsible for any loss or damage to Products following delivery to the carrier. Failure to deliver by the specified date will not be a sufficient cause for cancellation.

Changes: Buyer may request modifications as to the amount, scope and/or nature of Products to be supplied by a written change request. If, in the opinion of Echologics, any modification will affect the agreed fixed price and/or time of delivery, Echologics will notify Buyer thereof in writing and will not be obligated to perform any modification unless agreed to by Echologics. Buyer will confirm that such change is authorized and accepted by issuing an Order revision.

Cancellation: Buyer may cancel this Order only upon written notice and payment to Echologics of reasonable cancellation charges.

Returns: No returns will be accepted by Echologics without Buyer first obtaining Echologics’ written consent. In the case such consent is obtained, the price paid for the Product will be credited subject to the following: (a) all Product returned is, on its arrival at Echologics’ facility, found to be in first-class condition; if not, the cost of putting the Product in a salable condition will be deducted from the credit memoranda; (b) a handling charge deduction will be made from the credit memoranda issued for Product returned; and (c) transportation charges, if not prepaid, will be deducted from the credit memoranda.

Force Majeure: Echologics will not be liable for delay in delivery due to causes beyond its reasonable control, including, but not limited to, acts of God, acts of government, acts of Buyer, fires, labor disputes, boycotts, floods, epidemics, quarantine restrictions, war, insurrection, terrorism, riot, civil or military authority, freight embargos, transportation shortages or delays, unusually severe weather or inability to obtain necessary labor, materials or manufacturing facilities due to such causes. In the event of a delay, the date of delivery will be extended for a length of time equal to the period of delay.
Proposal Number: 42219002  
EchoShore®-DX Permanent Leak Monitoring System  
Purissima Hills Water District

Warranty: Echologics warrants that on the date of delivery and for a period of 12 months thereafter (the “Warranty Period”), the Products when properly installed and operated, will perform in accordance with the specifications contained in the user documentation and will be free of any material defects in workmanship and material. Products may be manufactured using some refurbished components or may have been used internally for reliability or performance testing. Spare parts may be refurbished. In the event that the Products do not operate as specified above during the Warranty Period, Buyer must notify Echologics in writing prior to the expiration of the Warranty Period in order to avail of the remedies contained in this section. Upon receipt of such notification, Echologics may repair or replace the Product at no additional cost to Buyer. If Echologics cannot repair the Product or replace it with a working Product, then Echologics will refund to Buyer any amounts paid by Buyer for the Products in question. This section contains Buyer’s entire rights and Echologics’ liability in the event the warranty contained in this section is not fulfilled. EXCEPT AS OTHERWISE STATED HEREIN, BUYER ACKNOWLEDGES THAT THERE ARE NO REPRESENTATIONS OR WARRANTIES CONCERNING THE PHYSICAL AND MECHANICAL CONDITION, SUITABILITY, DURABILITY, MERCHANTABILITY OR FITNESS OF THE PRODUCTS FOR ANY PURPOSE, WHETHER EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE, INCLUDING WITHOUT LIMITATION, IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY OR FITNESS FOR INTENDED PURPOSE OR THAT THE PRODUCTS OR DOCUMENTATION WILL MEET BUYER’S NEEDS OR WILL BE AVAILABLE FOR USE AT ANY PARTICULAR TIME OR WILL BE ERROR FREE.

Limitation of Liability: The remedies set forth herein are exclusive, and the total liability of Echologics, including its affiliates, officers, employees, agents, subcontractors, suppliers and representatives, with respect to this Order or any breach thereof, whether based on contract warranty, tort, indemnity, strict liability or otherwise, will not exceed the Order price of the specific Products which gives rise to the claim. In all cases where Buyer claims damages allegedly arising out of defective or nonconforming Products, Buyers exclusive remedies and Echologics’ sole liability will be those specifically provided for under the Warranty Section. IN NO EVENT, WHETHER ARISING BEFORE OR AFTER COMPLETION OF ITS OBLIGATIONS UNDER THE CONTRACT, WILL ECHOLOGICS BE LIABLE FOR SPECIAL INDIRECT, CONSEQUENTIAL, INCIDENTAL OR PUNITIVE DAMAGES OF ANY KIND (INCLUDING BUT NOT LIMITED TO LOSS OF USE, REVENUE OR PROFITS, INVENTORY OR USE CHARGES, COST OF CAPITAL OR CLAIMS OF CUSTOMERS) INCURRED BY BUYER OR ANY THIRD PARTY.

Indemnity: Buyer agrees to indemnify, hold harmless and defend Echologics, including its affiliates, officers, employees, agents, subcontractors, suppliers and representatives, against any and all judgments, losses, damages, expenses, costs, including defense costs and legal fees, arising from any and all lawsuits, demands, or claims for personal injury, death, property damage, or other liability arising or claimed to arise from any act or omission of the Buyer or Echologics in any way related to this Order or Products, whether such claims are based upon contract, warranty, tort (including but not limited to active or passive negligence), strict liability, failure to comply with any applicable law, or other allegation of fault. To the extent the aforesaid obligation of the Buyer to so indemnify Echologics is prohibited by the laws and statutes of the state(s) or province(s) where this Agreement is in effect, then the obligation created under this provision will, but only to the extent of such prohibition, be null and void. The remainder of the Buyer’s indemnity obligations will remain in effect and be binding upon the parties.

Taxes:  Echologics’ price, unless otherwise agreed, is fixed and does not include, and Echologics is not responsible for, payment of any tax levied for sales, use, excise, value-added, goods and services, business (franchise or privilege) or any duties, charges or other such taxes.

Set-Off: All amounts that Buyer owes Echologics under an Order will be due and payable according to the terms of the Order. Buyer may not set-off such amounts or any portion thereof, whether or not liquidated, against sums that Buyer asserts are due it or any of its affiliates under other transactions with Echologics or any of its affiliates.

Non-Disclosure and Non-Use of Echologics’ Information: Buyer agrees that it will not disclose or make available to any third party any of Echologics’ data or other information pertaining to this Order without obtaining Echologics’ prior written consent.
Intellectual Property. Echologics makes no express or implied representation or warranty that the Products will not infringe any patent, copyright or other intellectual property rights. Echologics will make reasonable efforts to ensure that the Products will not infringe third party intellectual property rights. Buyer acknowledges the great value of goodwill associated with the name and trademarks of Echologics, and the identification of the Products therewith. Buyer will not obscure, effect or permit the removal or alteration of any trademarks, copyright notices, patent numbers, serial numbers or the like affixed to any Product, related materials or packaging. All rights, title and interest in and to the designs, models, patterns, specifications, copyrights, patents, trade secrets, trademarks and other intellectual and industrial property in the Products, documentation and related materials will remain vested in Echologics or its third party suppliers.

Export/Import: Buyer agrees that it will comply with all applicable import and export control laws and/or regulations, including without limitation those of the United States and/or other jurisdictions from which Products may be supplied or to which Products may be shipped. In no event will Buyer use, transfer, release, import, export or re-export Products in violation of such applicable laws and/or regulations.

Assignment: Buyer will not assign an Order or any portion thereof without the prior written consent of Echologics.

Waiver: Failure by Echologics to assert all or any of its rights upon any breach of an Order will not be deemed a waiver of such rights either with respect to such breach or any subsequent breach, nor will any waiver be implied from the acceptance of any payment of service. No waiver of any right will extend to or affect any other right Echologics may possess, nor will such waver extend to any subsequent similar or dissimilar breach.

Severability: If any portion of these Terms is determined to be illegal, invalid or unenforceable for any reason, then such provision will be deemed stricken for purposes of the dispute in question and all other provisions will remain in full force and effect.

Compliance with Laws/Anti-Bribery: Echologics and Buyer agree to comply with all applicable laws, regulations, codes and standards, including but not limited to those of the United States and other jurisdictions where the parties conduct business. Additionally, Buyer has not and will not offer, promise authorize or make, directly or indirectly, any payments (in money or any other item of value), contributions or gifts to any non-U.S. government agency, department official or government owned or controlled entity in order to obtain or retain business, or secure any other Improper business advantage, which would violate the U.S. Foreign Corrupt Practices Act and/or any other applicable anti-bribery laws.

Time Limitation to Bring Action: It is agreed that no suit or cause of action or other proceeding will be brought against either party more than 1 year after accrual of the cause of action or 1 year after the claim arises, whichever is shorter, whether known or unknown when the claim arises or whether based on tort, contract or any other legal theory.

Choice of Law Provision: In the event that Buyer is located in Canada, these Terms will be governed by and construed in accordance with the laws of the Province of Ontario and the laws of Canada applicable in Ontario, and will be treated, in all respects, as an Ontario contract. In the event that Buyer is located in Australia or New Zealand, these Terms will be governed by and construed in accordance with the laws in force in the State of New South Wales. In the event that Buyer is located in Europe, these Terms will be governed by and construed in accordance with the laws in force in The Netherlands. In the event that Buyer is located in the United States or any other part of the world other than Canada, Europe or Australia/New Zealand, these Terms will be governed by and construed in accordance with the laws of the State of Georgia. The parties agree to submit to the jurisdiction of the courts of (a) the Province of Ontario (in cases where the Buyer is located in Canada), (b) the State of New South Wales (in cases where the Buyer is located in Australia or New Zealand), (c) The Netherlands (in cases where the Buyer is located in Europe and (d) the federal court in the State of Georgia (in cases where the Buyer is located in the United States or any other part of the world other than Canada, Europe or Australia/New Zealand), and in each case waive any objection relating to improper venue or forum non conveniens to the conduct of any proceeding in any such court. It is agreed that no suit or cause of action or other proceeding will be brought against either party more than 1 year after accrual of the cause of action or 1 year after the claim arises, whichever is shorter, whether known or unknown when the claim arises or whether based on tort, contract or any other legal theory.
9.5 ATTACHMENT A

EchoShore®-DX Services and Services Descriptions

Please refer to Section 6 – Scope of Supply

*** Echologics is yet to receive the GIS files that would constitute the scope of the proposed pilot. Once Purissima Hills Water District determines the designated distribution mains to be monitored and provides the respective GIS files, a leak monitoring sensor network map will then be provided. This proposal will be issued with a revision number and updated map to show the placement of the EchoShore-DX nodes.
FIRM PROPOSAL

PAX PWM150 MIXER
FOR
PURISSIMA HILLS WATER DISTRICT, CA
1MG MULTIPLE TANKS

PAX Water Technologies, Inc. File No.: P18-3457

Prepared on: May 15, 2018

AUTHORIZED SALES REPRESENTATIVE:
G3 Engineering, Inc.
Charlie Kanturek
PO Box 2148
Granite Bay, CA 95746
T: (916) 797-1880
Email: charlie@g3engineering.com
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<table>
<thead>
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<th>Section</th>
<th>Description</th>
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<td>Terms and Conditions</td>
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<tr>
<td>Section 4:</td>
<td>Product Specifications</td>
</tr>
</tbody>
</table>

**IMPORTANT NOTICE:** All the information in this Proposal or supplied in connection with this Proposal (including drawings, designs and specifications) (collectively, the "Information") is confidential and has been prepared for Buyer’s use solely in considering the purchase of the goods and services described. Transmission of all or any part of this Proposal to others or use by Buyer for other purposes is unauthorized without Seller’s advance written consent.
May 15, 2018

Patrick Walter  
Purissima Hills Water District  
26375 Fremont Rd  
Los Altos Hills, CA 94022

Re: PAX PWM150 Mixer for Purissima Hills Water District, CA  
PAX Water Technologies, Inc. File No.: P18-3457

Dear Patrick,

Thank you for your interest in PAX Water Technologies, Inc., a UGSI Solutions company. We are pleased to provide a Proposal for two (2) PAX PWM150 mixers for the 1MG Multiple Tanks. Our Proposal is based on the following design criteria:

Nominal Tank Volume, in Millions 1  
Average Water Volume, in Millions 0.75

The PAX PWM150 mixer is a submersible active mixing system for potable water storage tanks and reservoirs. When operated correctly, the PAX PWM150 mixer can rapidly eliminate thermal stratification, decrease ice formation, rapidly blend and distribute doses of residual disinfectant, and maintain uniform chemical and temperature conditions. Under some conditions, the mixing action can also reduce the rate of residual disinfectant loss and lower volatile disinfection byproduct levels inside the tank when used as part of an in-tank aeration system.

Installation of the PAX PWM150 mixer is very simple. The utility or contractor can perform the “wet-side” mixer installation while the tank is full by lowering the mixer into the tank access hatch using a built in power cord.

Equipment start-up may be provided by PAX or the local PAX representative. PAX will provide installation a start-up checklist form.

A detailed scope of work and firm price for the complete system is listed in Section 1 of this Proposal. Section 3 includes our standard Terms and Conditions. All pricing is based on the scope of work described in Section 1 and the Terms and Conditions in Section 3. Section 4 includes our product specification.

The PAX line of water mixers offers many advantages, including:

• Eliminates thermal stratification, short-circuiting and “dead zones”
• Eliminates chemical stratification and residual loss
• Lowers surface water temperature and combats biofilm growth
• Reduces variability in water taste and odor
• Reduces nitrification risk in chloraminated water systems
• Lowers rate of disinfection by-product (DBP) formation
• Delivered and installed quickly, with minimal construction and installation cost
• Proven track record supported by years of successful operational experience

We look forward to working with you on this project. If we can be of any further assistance, please do not hesitate to contact our sales representative, Charlie Kanturek at G3 Engineering, or me at (650) 469-2369.
Thank you.

Sincerely,

Lashley Loomis
Regional Sales Manager

cc: Joshua Kurniawan, Process Solutions, Inc.
    Charlie Kanturek, G3 Engineering, Inc.
SECTION 1

SCOPE OF SUPPLY
PAX PWM150 MIXER

A. Scope of Work by PAX
B. Scope of Work by Others
C. Clarifications
D. Terms of Payment/Price Validity
E. Delivery
F. Warranty
A. SCOPE OF WORK BY PAX

The following equipment and services comprise our scope of work:

<table>
<thead>
<tr>
<th>No</th>
<th>Item Description</th>
<th>Qty.</th>
</tr>
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<tbody>
<tr>
<td>1.</td>
<td>PWM150 Mixer Wet Assembly, including:</td>
<td>2</td>
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<tr>
<td></td>
<td>▪ Spiral-shaped nozzle</td>
<td></td>
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<tr>
<td></td>
<td>▪ Electropolished to minimize surface corrosion</td>
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<td></td>
<td>▪ Integrated power cable and lowering mechanism for simplicity</td>
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<td></td>
<td>▪ The ability to function continuously regardless of tank cycles</td>
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<tr>
<td></td>
<td>▪ 230V three phase ½ horsepower water-cooled motor powered by the PAX Control Center</td>
<td></td>
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<tr>
<td>2.</td>
<td>PAX Control Center Dry Assembly with SCADA Compatibility, including:</td>
<td>2</td>
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<tr>
<td></td>
<td>Nema 3R Enclosure:</td>
<td></td>
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<tr>
<td></td>
<td>▪ Lockable and weather resistant</td>
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<tr>
<td></td>
<td>▪ Overall weight of control center 50 lbs.</td>
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<tr>
<td></td>
<td>▪ Green and Red LED Indicator lights to display motor status</td>
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<tr>
<td></td>
<td>Motor Controller/VFD:</td>
<td></td>
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<tr>
<td></td>
<td>▪ 115VAC single phase, rated to 1.0 HP</td>
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<tr>
<td></td>
<td>▪ Operating temperature range -4 °F to 129 °F (-20 °C to 54 °C)</td>
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<td></td>
<td>▪ Manual speed control</td>
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<td></td>
<td>▪ Thermal shut-off protection built-in</td>
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<tr>
<td></td>
<td>▪ Current overload protection built-in</td>
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<tr>
<td></td>
<td>▪ 300mA trip level GFCI</td>
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<td></td>
<td>SCADA outputs included</td>
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<tr>
<td></td>
<td>▪ Digital Output signal indicating motor running</td>
<td></td>
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<tr>
<td></td>
<td>▪ Digital Output signal indicating fault</td>
<td></td>
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<tr>
<td></td>
<td>▪ Digital Input/Output signal for remote motor on/off</td>
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<tr>
<td></td>
<td>▪ RS-485 or Dry Contact connections</td>
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<tr>
<td>3.</td>
<td>Cable 130 ft., including:</td>
<td>2</td>
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<tr>
<td></td>
<td>▪ Flat-jacketed 4 conductor</td>
<td></td>
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<tr>
<td>4.</td>
<td>Tank Penetration Accessories</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>▪ Stainless steel strain relief for 4 wire flat-jacketed cable</td>
<td></td>
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<tr>
<td>5.</td>
<td>Operation &amp; Maintenance Manual as Follows</td>
<td>Included</td>
</tr>
<tr>
<td></td>
<td>▪ O&amp;M Manual:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ Qty. Two (2) Hard Copies</td>
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<tr>
<td></td>
<td>Please notify us if an alternate quantity is required so that we can modify our Proposal accordingly.</td>
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<tr>
<td>6.</td>
<td>Manufacturer’s Field Services (1 Day(s) at the Jobsite), including:</td>
<td>Included</td>
</tr>
<tr>
<td></td>
<td>▪ Installation Inspection</td>
<td></td>
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<tr>
<td></td>
<td>▪ System Start-Up</td>
<td></td>
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<tr>
<td></td>
<td>▪ Operator Training</td>
<td></td>
</tr>
</tbody>
</table>
B. SCOPE OF WORK BY OTHERS

1. Equipment unloading and installation.
2. All civil works and concrete pad for equipment.
3. Any underground or structural work.
4. Anchor bolts and seismic restraints.
5. Heat tracing and insulation of all interconnecting equipment.
6. Room ventilation, air conditioning or lighting.
7. Any video recording.
8. Electrical power to control panel.
9. Any electrical conduit runs.
10. Any tank recoating services, labor, or parts.
11. Any tank hatch penetrations.
12. All electrical conduit, wiring, electrical material, etc. between control panel, SCADA, etc.
13. All taxes, fees, lien waivers, bonds and licenses.
14. Any permitting or regulatory approvals.
15. Any items not explicitly listed under Scope of Work by PAX above.

C. CLARIFICATIONS

1. If transaction is tax-exempt, please submit Tax Exemption Certificate to PAX.
2. PAX requires a minimum of two (2) weeks notification prior to performing onsite installation inspection, system start-up and training. PAX will work with you to attempt to accommodate your scheduling needs. Contact the Service Department at (866) 729-6493 to schedule the onsite visit.
3. Once the on-site service has been scheduled, PAX requires a minimum of one (1) week notification in the event of a delay. Notice of delay received less than one (1) week prior to a scheduled site visit may result in a change fee.

D. TERMS OF PAYMENT/PRICE VALIDITY

- Payment terms are 100% net 30 days after shipment of equipment.
- Price valid for 90 days. PAX may reprice this Proposal thereafter or if delivery occurs more than 365 days after PAX receives a mutually agreed order.

E. DELIVERY

- Equipment Shipment: 4 weeks after receipt of mutually agreed order
F. WARRANTY

- PAX will warrant the equipment as set forth in its standard warranty included in the Terms and Conditions at Section 3 of this Proposal. The Warranty Period (as defined therein) for the PAX PWM150 mixer is 36 months.
SECTION 2

PROPOSAL ACCEPTANCE
PAX Water Technologies, Inc. File No.: P18-3457

1) This Proposal by PAX Water Technologies, Inc. (“Seller”) is contingent upon the undersigned buyer (“Buyer”) executing this Proposal, including without limitation agreeing to the terms and conditions contained in this Proposal.

2) Please return a signed copy of this Proposal to:
   PAX Water Technologies, Inc.
   860 Harbour Way South, Suite C
   Richmond, CA, 94804
   Attn: Orders
   Phone: (510) 550-7100
   E-mail: orders@paxwater.com

Thank you for your interest in PAX. We are committed to meeting your expectations.

Proposal Acceptance
An authorized signature indicates Buyer's acceptance of this Proposal, including without limitation the Terms and Conditions in Section 3 below.

____________________________________________________________
Buyer's Name (printed)

____________________________________________________________
Buyer's Authorized Signature

____________________
Date
SECTION 3

TERMS AND CONDITIONS

1. Applicable Terms. These terms govern Seller’s sale, and Buyer’s purchase, of the products and/or services referred to in Seller’s proposal or quotation (collectively, the “Products”). The front page of Buyer’s purchase order (disregarding any reference to terms and conditions and any provisions that conflict herewith), if any, together with the description of the Products in Seller’s proposal or quotation and these terms and conditions comprise the complete and exclusive agreement between the parties (the “Agreement”) related to the purchase and sale of the Products. All prior communications, documents, negotiations and representations, if any, are merged herein. Whether these terms are included in an offer or an acceptance by Seller, such offer or acceptance is conditioned on Buyer’s assent to these terms. Any additional, different or conflicting terms contained in Buyer’s request for proposal, specifications, purchase order or any other written or oral communication from Buyer shall not be binding in any way on Seller, whether or not they would materially alter this document, and Seller hereby objects thereto. All orders are subject to prior credit approval by Seller.

2. Pricing. The prices shall be: (a) as stated in Seller’s proposal or order acknowledgment, or (b) if none are stated, Seller’s standard prices in effect at the time of release for shipment.

3. Payment. Unless otherwise stated, all payments shall be net 30 days from invoice date payable in United States Dollars. If Buyer fails to make any payment to Seller when due, Buyer's entire account(s) with Seller will become immediately due and payable without notice or demand. Buyer will pay 1½% interest per month, compounded monthly, on all amounts not received by the due date. Buyer hereby grants Seller a purchase money security interest in the Products until such time as Seller is fully paid. Buyer will assist Seller in taking action to perfect and protect Seller's security interest. Seller may make partial shipments, in which case, Buyer shall pay for each shipment in accordance with the terms hereof.

4. Taxes, Shipping, Packing. Except to the extent expressly stated otherwise in these terms or in Seller’s proposal or quotation, prices do not include any freight, storage, insurance, taxes, excises, fees, duties or other government charges, and Buyer shall pay such amounts or reimburse Seller for any such amounts Seller pays. If Buyer claims a tax or other exemption or direct payment permit, it shall provide Seller with a valid exemption certificate or permit and indemnify, defend and hold Seller harmless from any taxes, costs, and penalties arising out of same. Prices include the costs of Seller's standard domestic packing only. Any deviation from standard packing (domestic or export) shall result in extra charges. Any and all increases, changes, adjustments, or surcharges (including fuel surcharges) which may arise in connection with the freight charges, rates or classification included as part of this Agreement, shall be for the Buyer’s account.

5. Delivery. Products shall be delivered F.O.B. Seller’s point of shipment or Ex Works Seller’s point of shipment if being delivered outside the United States. All delivery dates are estimated and are dependent in part upon prompt receipt of all necessary information from Buyer, including submittal approvals, if applicable, and all required commercial documentation. Seller will make a good faith effort to complete delivery of the Products on the date and to the location specified in writing by Buyer, but Seller assumes no liability for loss or damage due to delay or inability to deliver, whether or not such loss or damage was made known to Seller. If Buyer causes or requests a shipment delay, or if Seller ships or delivers the Products erroneously as a result of inaccurate, incomplete or misleading information supplied by Buyer or its agents or representatives, storage and all other additional costs and risks will be borne solely by Buyer. Any claims for Products damaged or lost in transit (“Transit Losses”) must be made by Buyer to the carrier and reported to Seller within one business day following delivery to Buyer.
6. Inspection and Acceptance. Buyer will have seven days from the date Buyer receives any Products to inspect such Products for defects and nonconformance which are not due to Transit Losses, and to notify Seller, in writing, of any defects, nonconformance or rejection of such Products. After such seven-day period, Buyer will be deemed to have irrevocably accepted the Products, if not previously accepted. After such acceptance, Buyer will have no right to reject or revoke acceptance of the Products for any reason.

7. Returns and Cancellation. Buyer may not return custom engineered Products. Buyer may return other Products only with Seller’s prior written approval, which may be withheld in Seller’s sole discretion. Any authorized return will be subject to payment of a restocking charge and will be allowed only if the subject Product: (i) is in new condition, suitable for resale, and (ii) has not been used, installed, modified, altered or damaged. The restocking charge for authorized returns will be no less than (x) 25% of the purchase price, net of any freight charges included in the purchase price, plus (y) 100% of freight costs incurred by Seller. Buyer is responsible for the payment or reimbursement of return freight charges. Returns will be shipped F.O.B. Seller’s location. Seller may, but will not be obligated to, treat any cancellation of an accepted order as an authorized return.

8. Force Majeure. Seller will have no liability for any breach caused by extreme weather or other act of God, strike or other labor shortage or disturbance, fire, accident, war or civil disturbance, delay of carriers, failure of normal sources of supply, act of government, or any other cause beyond Seller’s reasonable control.

9. Warranty. Seller warrants for the Warranty Period (as defined below) that each Product is free from defects in material and workmanship and conforms to Seller’s specifications applicable to the Product. Seller’s warranty is transferable during the Warranty Period to the initial end-user of the Product (“Owner”). Seller’s warranty is conditioned on (i) Seller’s verification of the alleged breach; (ii) the Product being stored, handled, installed, operated and maintained in accordance with Seller’s instructions; (iii) no repairs, modifications or alterations being made to the Product other than by Seller or its authorized representatives, (iv) Buyer or Owner providing prompt written notice of any warranty claims within the Warranty Period, and (v) at Seller’s discretion, Buyer or Owner either removing and shipping the Product or non-conforming part thereof to Seller, at Buyer’s or Owner’s expense, or Buyer or Owner granting Seller access to the Products at all reasonable times and locations to assess the warranty claims. Seller’s warranty does not apply to software and does not cover damage due to (x) lightning, flood or other acts of nature or force majeure events, or failure of or inappropriate application of peripheral devices, including lightning or surge protectors, (y) installation by a person or entity other than Seller or Seller’s authorized installation contractor, or (z) ordinary wear and tear. Lightning protection is recommended particularly in areas historically prone to lightning, and it is Buyer’s or Owner’s responsibility to properly select and install lightning protection in accordance with all applicable laws, codes and regulations.

Buyer’s or Owner’s sole remedy for any breach of Seller’s warranty is limited to Seller’s choice of repair or replacement of the Product, or non-conforming parts thereof F.O.B. jobsite, or refund of the purchase price for the subject Product or part. Seller reserves the right to provide new or reconditioned replacement Products or parts. The warranty on repaired or replaced Products or component parts is limited to the remainder of the original Warranty Period. The warranty includes labor to remove and reinstall repaired or replacement Products or components for a period of 120 days after shipment of the Product; provided that (a) the defective Product was originally installed, and the repaired or replacement Products will be installed, in accordance with Seller’s guidelines in effect at the time of installation; and (b) labor of divers and labor required to drain the storage tank or reservoir is excluded. After such period, Buyer or Owner shall be responsible for (i) any labor required to remove or gain access to the Product so that Seller can assess the available remedies; and (ii) all costs of installation of repaired or replaced Products or component parts. If Seller determines that any alleged damage is not covered by this warranty, Seller will charge, and Buyer will pay, Seller’s normal rates for any inspection or repair performed by Seller, and for any materials provided or used in connection therewith.

Phone: (866) 729-6493          Email: sales@paxwater.com          Web: paxwater.com
The “Warranty Period” applicable to each Product begins on the date of installation or three (3) months after shipment, whichever comes first, and continues for the period of time set forth below opposite the applicable Product.

<table>
<thead>
<tr>
<th>Mixers</th>
<th>Warranty Duration</th>
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<tbody>
<tr>
<td>PWM 100/150 (including Standpipe)</td>
<td>36 months</td>
</tr>
<tr>
<td>PWM 200 V1 (including Solar) and V2</td>
<td>24 months</td>
</tr>
<tr>
<td>PWM 400 V1 (including Solar)</td>
<td></td>
</tr>
<tr>
<td>PWM 500 V1 and V2</td>
<td></td>
</tr>
<tr>
<td>PWM 600 V1 and V2</td>
<td></td>
</tr>
<tr>
<td>PWM 400 V2</td>
<td>60 months</td>
</tr>
<tr>
<td>All other Products</td>
<td>12 months</td>
</tr>
</tbody>
</table>

THE WARRANTY SET FORTH IN THIS SECTION IS SELLER'S SOLE AND EXCLUSIVE WARRANTY AND SELLER’S WARRANTY IS SUBJECT TO SECTION 10 BELOW. SELLER MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WARRANTIES REGARDING SERVICES RENDERED, IF ANY, OR ANY WARRANTIES THAT MIGHT ARISE FROM COURSE OF DEALING OR USAGE OF TRADE.

10. LIMITATION OF LIABILITY. NOTWITHSTANDING ANYTHING ELSE TO THE CONTRARY, SELLER WILL NOT BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, PUNITIVE OR OTHER INDIRECT DAMAGES, AND SELLER’S TOTAL LIABILITY ARISING AT ANY TIME FROM THE SALE OR USE OF THE PRODUCTS WILL NOT EXCEED THE PURCHASE PRICE PAID FOR THE PRODUCTS. THESE LIMITATIONS APPLY WHETHER THE LIABILITY IS BASED ON CONTRACT, TORT, STRICT LIABILITY OR ANY OTHER THEORY. THE REMEDIES SET FORTH IN THIS AGREEMENT ARE INTENDED TO CONSTITUTE A COMPLETE ALLOCATION OF THE RISKS BETWEEN THE PARTIES, AND BUYER ACKNOWLEDGES THAT IT IS KNOWINGLY LIMITING THE REMEDIES THAT MIGHT OTHERWISE BE AVAILABLE TO BUYER. BECAUSE THIS AGREEMENT AND THE PRICE PAID REFLECT SUCH ALLOCATION, THE REMEDIES PROVIDED TO BUYER HEREUNDER WILL NOT HAVE FAILED OF THEIR ESSENTIAL PURPOSE EVEN IF THEY OPERATE TO BAR RECOVERY FOR CERTAIN DAMAGES THAT BUYER MAY INCUR.

11. Remedies of Seller. Any of the following will constitute an event of default which will enable Seller, at its option and without liability to Buyer, to cancel any unexecuted portion of the order that is the subject of this Agreement and to exercise any other right or remedy expressed herein or otherwise available at law or in equity: (i) the failure of Buyer to make any payment required hereunder when due ("Payment Default") or to perform any other term or condition contained herein; (ii) the insolvency of Buyer or its failure to pay its debts as they mature, an assignment by Buyer for the benefit of its creditors, the appointment of a receiver for Buyer or for the materials covered by this Agreement, or the filing of any petition to adjudicate Buyer bankrupt; (iii) a failure by Buyer to provide adequate assurance of performance within ten days after a justified demand by Seller; or (iv) if Seller, in good faith, believes that Buyer's prospect of performance under this Agreement is impaired. Seller’s obligations under Section 9 hereof will be suspended during the pendency of any Payment Default. No such suspension will extend Seller’s obligations under Section 9 beyond the Warranty Period provided therein. Seller’s election of any remedy in the event of a default by Buyer will not preclude Seller from exercising any other remedy available to Seller hereunder or at law or in equity for the same or any other default. In the event it becomes necessary to incur any expense for collection of any overdue account, Seller’s collection charges, including attorneys’ fees and expenses, will
be added to the balance due and Buyer will pay all such charges together with interest thereon from the date incurred in accordance with Section 3.

12. Equal Employment Opportunity. Seller is an equal opportunity employer. The parties shall, as applicable, abide by the requirements of 41 CFR 60-1.4(a), 41 CFR 60-300.5(a), 41 CFR 60-741.5(a) and Executive Order 13496 (29 CFR Part 471, Appendix A to Subpart A) (relating to the notice of employee rights under federal labor laws), and these laws and regulations are incorporated herein by reference.

13. Export Compliance. Buyer acknowledges that Seller is required to comply with applicable export laws and regulations relating to the sale, export, transfer, assignment, disposal, and use of the Products provided under this Agreement, including any export license requirements. Buyer agrees that such Products shall not at any time directly or indirectly be used, exported, sold, transferred, assigned, or otherwise disposed of in a manner which will result in non-compliance with such export laws and regulations. It shall be a condition of the continuing performance by Seller of its obligations hereunder that compliance with such export laws and regulations be maintained at all times. BUYER WILL INDEMNIFY, DEFEND AND HOLD SELLER HARMLESS FROM ANY AND ALL COSTS, LIABILITIES, PENALTIES, SANCTIONS AND FINES RELATED TO NON-COMPLIANCE WITH APPLICABLE EXPORT LAWS AND REGULATIONS.

14. Miscellaneous. No part of this Agreement may be changed or cancelled except by a written document signed by Seller and Buyer. As used in this Agreement, “including” and its variants mean “including without limitation” and its variants. No course of dealing or performance, usage of trade, or failure to enforce any term will be used to modify the Agreement. Buyer acknowledges that it has not relied upon any letters of intent, agreements, promises, negotiations, statements or representations other than those expressly set forth in this Agreement and that no such extraneous document or other communication shall be of any force or effect. Buyer agrees and warrants that in entering into this Agreement, Buyer is relying solely upon the information contained in this Agreement and not in reliance upon any other information. If any of these terms is unenforceable, such term will be limited only to the extent necessary to make it enforceable, and all other terms will remain in full force and effect. Buyer may not assign this Agreement without Seller’s prior written consent. This Agreement will be governed by the laws of the State of California without regard to its conflict of laws provisions. The application of the United Nations Convention on Contracts for the International Sale of Goods is excluded. Any bond issued by Seller in connection with the sale of the Products shall remain in effect for a maximum of two (2) years after acceptance of the Products, and the only warranty, guaranty or Product performance obligations covered thereby shall be those at Section 9 above. Buyer covenants to return any such bond to Seller upon the earlier to occur of (x) the expiration of the Warranty Period, and (y) the expiration of the aforesaid two-year period. All Product performance obligations of Seller are contingent on the conditions of and within the tank in which the Products are installed being as specified by Seller and will be considered satisfied and discharged upon successful completion of the initial Product performance testing. EACH OF THE PARTIES IRREVOCABLY AND UNCONDITIONALLY WAIVES ITS RIGHT TO TRIAL BY JURY IN RESPECT OF ANY LEGAL PROCEEDING DIRECTLY OR INDIRECTLY ARISING IN CONNECTION WITH THE TRANSACTION CONTEMPLATED HEREBY.
SECTION 4

PRODUCT SPECIFICATIONS
PAX PWM150 MIXER
The PAX Water Mixer (PWM150) is an active jet mixer for small water storage tanks. The mixer creates a powerful vortex flow pattern to thoroughly circulate the entire tank volume and prevent water quality issues. Compact and lightweight, the mixer can be easily lowered into the tank from the hatch and self-rights on the tank floor, even on a sloped surface.

- Lightweight and easy-to-install
- Eliminates thermal stratification
- Improves disinfectant residual levels
- Lowers DBPs and nitrifying bacteria
- Protects tank from ice damage and corrosion

The PAX Water Mixer creates a powerful vortex flow pattern to thoroughly mix the entire tank volume.
# PWM150 MIXER Options

<table>
<thead>
<tr>
<th>MIXER SPECIFICATIONS</th>
<th>PWM150 (115V)</th>
<th>PWM150 (230V)</th>
<th>PWM150 (115) with Control Center (PCC105)</th>
<th>PWM150 (230) with Control Center (PCC105)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Supply Requirement</td>
<td>120 VAC, 60 Hz, GFCI-protected, 20 amp circuit</td>
<td>240 VAC, 60 Hz, GFCI-protected, 15 amp circuit</td>
<td>120 VAC, 50/60 Hz, non-GFCI-protected, 20 amp circuit</td>
<td>240 VAC, 50/60 Hz, non-GFCI-protected, 20 amp circuit</td>
</tr>
<tr>
<td>Customer Supplied Power Switch</td>
<td></td>
<td></td>
<td>Type 3R safety disconnect switch</td>
<td></td>
</tr>
<tr>
<td>Motor Type</td>
<td>115 VAC, 60 Hz, water-filled, water-lubricated</td>
<td>230 VAC, 60 Hz, water-filled, water-lubricated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominal Power Draw</td>
<td></td>
<td></td>
<td>1.15 kVA (670 watts)</td>
<td></td>
</tr>
<tr>
<td>Footprint Diameter</td>
<td></td>
<td></td>
<td>10” (25 cm)</td>
<td></td>
</tr>
<tr>
<td>Height</td>
<td></td>
<td></td>
<td>2’ 10” (85 cm)</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td></td>
<td></td>
<td>42 lbs. (19 kg)</td>
<td></td>
</tr>
<tr>
<td>Material: Housing</td>
<td></td>
<td></td>
<td>316 stainless steel</td>
<td></td>
</tr>
<tr>
<td>Material: Motor Seals</td>
<td></td>
<td></td>
<td>Chlorine/chloramine-resistant NBR rubber</td>
<td></td>
</tr>
<tr>
<td>Material: Foot</td>
<td></td>
<td></td>
<td>Chlorine/chloramine-resistant EPDM rubber</td>
<td></td>
</tr>
<tr>
<td>Wiring</td>
<td>NSF 61 &amp; UL-listed submersible pump cable 14 AWG (2.1 mm2) XLPE (.6” x .28” / 15 mm x 7 mm)</td>
<td>NSF 61 &amp; UL-listed submersible pump cable 14 AWG (2.1 mm2) XLPE (.78” x .28” / 20 mm x 7 mm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control Center Dimensions</td>
<td>N/A</td>
<td></td>
<td>42 lbs. (19 kg) (20” x 16” x 8” / 50 cm x 40 cm x 20 cm)</td>
<td></td>
</tr>
<tr>
<td>Material: Control Center</td>
<td>N/A</td>
<td></td>
<td>Powder-coated carbon steel, Type 3R enclosure</td>
<td></td>
</tr>
</tbody>
</table>

## TOP VIEW

![Top View](image1)

## SIDE VIEW

![Side View](image2)

## CONTROL CENTER

(DEPENDENT ON CONFIGURATION)

![Control Center](image3)

For more information, contact us at 1-866-729-6493 or visit www.paxwater.com