



Augusta Regional Airport

Augusta, GA

* Images from <https://localitybiz.com/business/35188276/augusta-regional-airport-aircraft-rescue-fire-fighting-department-augusta>

ARFF Transition

OPP-2025-07-14-073398

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SUBMITTED TO:

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1.0 Project Background

Augusta Regional Airport requires a mobile firefighting foam cleaning system to remove per- and poly-fluoro alkyl substances (PFAS) from the foam tank and piping of aircraft rescue and firefighting (ARFF) vehicles. ECT₂ is presenting a rinsing alternative to full replacement of the fire truck and foam equipment.

ECT₂'s solution involves the deployment of our team to the Augusta, GA location to clean and prepare the vehicle for the new class of fluorine free foams. The equipment will be mobilized, operated, and demobilized by ECT₂ field service technicians.

While equipment washing and rinsing activity is not guaranteed to provide complete and total PFAS removal, ECT₂'s solution will significantly reduce the PFAS present within the fire truck equipment — this approach is widely accepted as current industry best practice.

1.1 PFAS Removal

In regard to PFAS removal, testing has demonstrated our proprietary cleaning solution to be much more effective than conventional triple rinse with water alone, and more effective at minimization of PFAS compounds leaching from piping into contained liquids thereafter (commonly referred to as rebound). Furthermore, our method generates a significantly smaller volume of wastewater.

ECT₂'s global experience treating PFAS, advanced R&D facility, and deep team of ARFF experts positions us to be your best partner for tackling the ARFF transition. ECT₂ has treated over 10 billion gallons of PFAS impacted water – including AFFF spill response, ARFF vehicle transition, and infrastructure transition work. ECT₂'s R&D facility has been working with the EPA on developing cost effective and best-in-class cleaning techniques to remove recalcitrant AFFF film off the inside of pipe material.

ECT₂'s testing matrix evaluated over 30 blends of cleaning chemistry and methodology to produce the most efficient and cost-effective methodology. Additionally, ECT₂'s project team includes Steve Pepper, former Phillips 66 Fire Chief and Chief of Crisis Management and Emergency Response (Global). Steve has led and consulted on the transition of ARFF and Refinery Vehicles and will provide expertise for this deployment.

1.2 ECT2 Results

ECT2 recently cleaned two OshKosh TI-3000 vehicles with 420-gallon foam concentrate tanks. Generating 1/3 the waste when compared to triple rinse, ECT2's cleaning method with only a single rinse was statistically equivalent in initial reduction efficiency despite have more than 18x higher starting contamination levels. Additionally, the truck cleaned with the ECT2 cleaning solution included a much larger fraction of sulfonic PFAS compounds which are more difficult to remove from surfaces.

Figure 1 shows that the 12-day rebound testing on those two foam tanks resulted in 71% removal efficiency for the triple rinse vs. 99.5% removal efficiency for the ECT2 method.

33-day rebound testing further reduced the removal efficiency for the triple rinse to only 50% while the removal efficiency for the ECT2 solution was at 98.3%.

Additional data is being collected on the effectiveness of this proprietary approach.

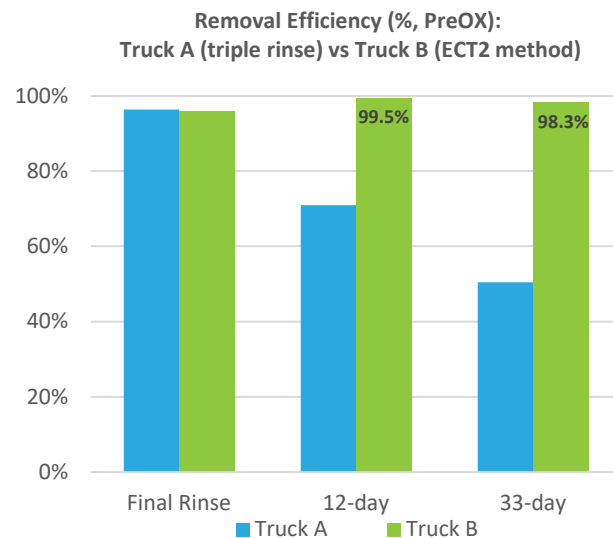


Figure 1. Side-by-side full scale testing

Figure 2 shows a comparison of the PFAS mass removed by ECT2's proprietary cleaning recipe vs. tap water on AFFF pipe samples.

Both tests had two steps of cleaning followed by triple rinse.

The resulting mass of PFAS recovered is the sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFPeS, PHHxS, PFHpS, PFOS, 6:2 FTS, and 8:2 FTS in the accumulated wastewater.

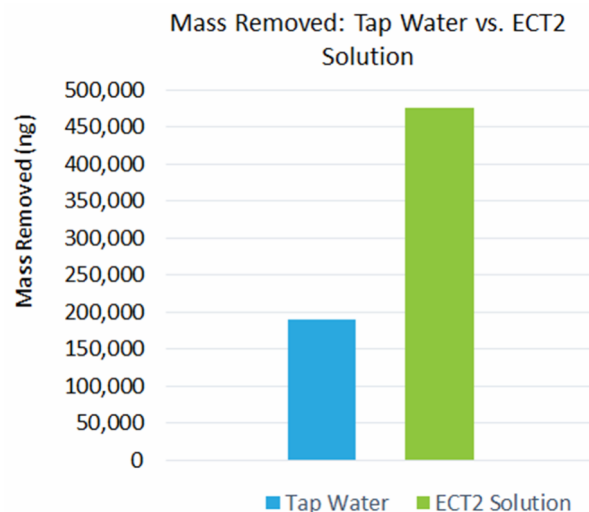


Figure 2. Bench scale comparison between tap water and ECT2 solution

2.0 Design Basis

ECT2 understands there are three ARFF vehicles that need the foam concentrate tank and piping cleaned to prepare for transition to synthetic fluorine-free foam (SFFF). Also two stationary tanks containing AFFF concentrate that need to be drained, rinsed, removed from the building and disposed of properly. ECT2 does not have all the details of the tank and piping systems at this time, but has summarized available information and assumptions in the following table as basis for estimation of project costs:

Table 1. ARFF information and waste volumes

Vehicle Type	HRET?	Foam Tank Volume (gal.)	Rinse WW per ARFF (gal.)	AFFF per ARFF (gal.)
2012 E-One P-7 1500	NO HRET	210	710	210
2002 Oshkosh Stryker 3000	HRET	420	920	420
1993 E-One Titan 3000	NO HRET	420	920	420
700-gallon poly tank	NO HRET	700	50	700
280-gallon poly tank	NO HRET	280	50	280
Totals			2,650	2,030

ECT2 has assumed that the foam concentrate tank on each ARFF vehicle as well as each poly tank will have a have top access hatch sufficient to enable field service technicians to access with cleaning equipment. Equipment is in good working order, including valves and actuators to isolate the water tank from the vehicle piping. There are accessible connections to enable the cleaning of each section of piping. The two poly tanks are free standing and there is no associated piping to clean, remove, or dispose of.

Also assumed is that the cleaning equipment will be able to set up next to the fire truck to be cleaned so there are not long runs of hose between components. The exact configuration of the tank and piping will impact the total rinse volumes generated in the cleaning process. If there is a larger volume to clean, both the amount of cleaning solution needed and rinsate generated, plus volume for disposal will increase.

ECT2 will use a proprietary cleaning solution plus rinse water to clean the tank and piping. This will provide a more effective cleaning than conventional triple rinse while using less water and producing less waste to transport and dispose of. The table below summarizes the estimated waste volumes based on the assumptions herein.

Table 2. Estimated waste volume summary

Item	Qty.
Gallons of AFFF concentrate in addition to ARFF foam tanks	335
5-gallon drums of AFFF concentrate in inventory	67
Gallons of concentrate in ARFF foam tanks	2,030
275-gallon totes of AFFF concentrate from vehicles	8
Gallons of rinse WW from ECT2 Method	2,650
275-gallon totes of rinse WW for disposal	10
Solid waste (used bag filters, nitrile gloves, paper towels, etc.)	-
55-gallon drum of solid waste	4

2.1 Cleaning Procedure

The cleaning procedure for each truck will consist of several steps as described below:

Step	Scope	Description
1	ECT2	Lay out containment areas, equipment, totes, and hoses
2	Augusta Regional Airport	Position ARFF vehicle on secondary containment berm
3	ECT2	Connect hoses, drain AFFF foam concentrate tank to waste container, rinse tank sides to foam concentrate waste container, reroute hoses
4	ECT2	Prepare cleaning solution (parallel path with steps 2 and 3)
5	ECT2	Use cleaning solution to wash the foam concentrate tank and piping exclusive of hoses and nozzles
6	ECT2	Rinse with potable water, drain to waste tote
7	Augusta Regional Airport	Relocate ARFF vehicle for SFFF filling
8	ECT2	Repeat for ARFF next vehicle
9	ECT2	Demobilize cleaning equipment

2.2 Schedule

Truck cleaning is estimated to occur as early as Q4 2025, but deployment of rental assets and field personnel will be based on site readiness and availability within the rental fleet at that time. ECT2 estimate is based on cleaning all vehicles in the scope table below without any idle days for the crew between truck cleanings. If additional time is required for foam proportioning evaluation or other delays outside ECT2 scope, there may be some additional cost to cover additional trips to site and extension of rental of the equipment. The schedule details will be confirmed as part of order entry.

3.0 Scope of Supply

Scope Item	ECT2	Augusta Regional Airport
Two adjacent truck bays with potable water and 110V power supply		X
Rental of ARFF vehicle cleaning equipment	X	
Secondary containment berms (one for ARFF vehicle, one for equipment)	X	
2 Field Service Technicians for 13 days to clean out 3 ARFF vehicles and remove 2 poly tanks	X	
Mechanical install and uninstall of ECT2 supplied equipment	X	
Laboratory analysis of two rinse water samples from each ARFF to show initial rinse water and final rinse water PFAS concentrations		X
Inspection and verification that vehicle is ready to load new foam and return to service		X
Supply, loading, and proportional testing of new SFFF foam		X
(8) 275-gal totes for collection of AFFF concentrate from vehicles	X	
(10) 275-gal totes (new or rebottled) for collection of rinse water	X	
(2) cubic yard boxes for collection of solid waste	X	
Forklift and operator for loading, unloading, and positioning of equipment during installation and demobilization		X
Moving ARFF vehicle		X
Any required permitting		X
Transportation and disposal of solid waste at RCRA Class C landfill and liquid waste at deep well injection site	X	

4.0 Pricing

Scope Item	Qty	UOM	Unit Price	Ext Price
Mobilization and Startup	1	Lot	\$17,700	\$17,700
Drain & clean 3 ARFF vehicles, drain and remove 2 tanks	1	Lot	\$99,800	\$99,800
Demobilization	1	Lot	\$10,400	\$10,400
Subtotal of Firm Prices				127,900
Budgetary – equipment freight round trip	1	Lot	\$9,600	\$9,600
Budgetary – cleaning waste transportation and disposal	1	Lot	\$83,100	\$83,100
Total Estimated Price				\$220,600

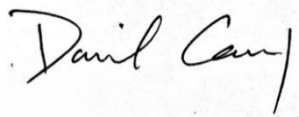
3.2 Payment / Shipping Terms

The fixed firm prices for mobilization, apparatus cleaning, and demobilization are valid for 30 days. Invoices to be paid in net 30 days. ECT2's Standard Terms and Conditions are the basis for this proposal. Equipment freight will be arranged as FCA seller's location. Equipment and labor for loading and unloading the equipment will be provided by Augusta Regional Airport.

- 100% of mobilization invoiced upon receipt of purchase order
- 50% of apparatus cleaning invoiced upon completion of mobilization
- 50% of apparatus cleaning invoiced upon completion of cleaning
- 100% of demobilization upon completion of demobilization
- Equipment freight is an estimate, to be invoiced as incurred at cost + 15%
- Disposal cost is an estimate, to be invoiced as incurred at cost + 15%

We look forward to supporting Augusta Regional Airport on this important project and welcome any questions you might have.

Respectfully submitted,



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Appendix A. Why Choose ECT2?

Emerging Compounds Treatment Technologies (ECT2) is a solution-driven water treatment equipment and services provider focused on treating emerging and complex contaminants in groundwater, surface water, wastewater and leachate. Our team has decades of experience in removing conventional, biological and emerging compounds from surface, ground, waste and drinking water with unparalleled proven experience gained from successfully executing projects around the globe.

ECT2 has operating plants at industrial facilities, government locations, and remediation sites from Australia, Europe and the US. ECT2 systems range in size from 5 gallons per minute (gpm) to 1,800 gpm, with larger systems currently under contract for design.

ECT2 brings extensive experience with bench and pilot testing services. We have performed numerous pilot projects and subsequently implemented successful full-scale projects. ECT2 brings your team the most experience in PFAS system design, implementation and interpretation in the industry.



Leading Water Treatment Solution-Provider

ECT2 is a solution-driven water treatment services provider focused on treating emerging and complex contaminants in groundwater, surface water, wastewater and leachate. ECT2 believes there are better ways to treat PFAS that involve concentrating technologies, like foam fractionation, that help minimize waste and sets the stage ultimately for destruction of PFAS.



Unparalleled Expertise

ECT2 consists of a team of experts with a well-documented history of treating a variety of emerging, complex, recalcitrant and conventional contaminants. Our goal is to deliver effective and economical solutions that meet our client's project needs, 100% of the time.



Experience

ECT2's focus on complex water treatment combined with our in-house team of engineers across multiple disciplines ensures that we deliver our clients efficient, effective and economical solutions that meet project objectives.



Client Partnership

ECT2 has an extensive tool belt of solutions for the broad array of water treatment challenges that arise on complex projects – we work in a collaborative partnership with our clients to ensure the right solution for each circumstance is implemented.

ECT2's global experience treating PFAS, advanced R&D facility, and deep team of experts positions us to be your best partner for tackling the ARFF transition. **ECT2 has treated over 10 billion gallons of PFAS impacted water – with three of the world's largest PFAS treatment systems nearing completion.** ECT2 specializes in treating hard-to-treat wastes with complicated chemistries and has extensive experience helping customers achieve performance objectives.

Legal Disclaimer

Please note that any information contained in this proposal is proprietary and confidential. It is the property of Emerging Compounds Treatment Technologies, (ECT2). It is provided to Augusta Regional Airport for the sole purposes of evaluating our qualifications to provide the services described in this proposal. The contents of this proposal should not be duplicated, used or disclosed in whole or in part for any other purposes. All analytical data generated is property of ECT2.

This Estimate and all information attached and contained herein are the property of ECT2. The design concepts, product information, technical data and specifications and information contained herein and attached hereto (the "Confidential Information") are proprietary to ECT2 and are submitted in confidence.

The Confidential Information is not transferable and must be used only for the purpose for which this estimate is expressly loaned. It must not be disclosed, reproduced, loaned or used in any other manner without the express written consent of ECT2. In no event shall it be used in any manner detrimental to the interest of ECT2.

All patent rights are reserved. Upon the demand of ECT2, this proposal and its attachments, along with all copies or extracts, and all related notes and analyses, must be returned to ECT2 or destroyed, as instructed by ECT2. Acceptance of the delivery of this document constitutes agreement to these Terms & Conditions. We appreciate your cooperation and look forward to supporting you.

ECT2 TERMS & CONDITIONS OF SALE

- 1. Introduction.** These Standard Terms and Conditions govern your use of Emerging Compounds Treatment Technologies, Inc. and its affiliates (hereinafter, "ECT2") Services and Goods identified in the accompanying proposal ("Proposal") provided to you by ECT2. Your use of the Services and Goods constitutes your acceptance of these Standard Terms and Conditions, and together with the Proposal, constitutes a legal and binding agreement between you and ECT2 ("Agreement").
- 2. Entire Agreement.** This Agreement constitutes the entire, complete and exclusive agreement between you and ECT2 for the Services and Goods to be provided by ECT2 set forth in the Proposal and supersedes and cancels all prior proposals, agreements and understandings, written or oral, relating to the subject matter of this Agreement. Nothing contained in this Agreement shall be construed to give any rights or benefits to anyone other than you and ECT2. This Agreement shall not be modified, rescinded or assigned (including any rights or obligations hereunder) except by the express written consent of you and ECT2.
- 3. Independent Contractor.** ECT2 shall perform Services and provide Goods as an independent contractor with exclusive control of the manner and means of performing Services and providing Goods in accordance with the requirements of this Agreement and in accordance with the standard of care generally accepted when providing similar services at the same time, in the same locale, and under like circumstances. ECT2 has no authority to act or make any agreements or representations on behalf of you.
- 4. Payment.** Payment of invoices is due within thirty (30) days of the invoice date. ECT2 shall maintain title in all Goods provided under this Agreement until such time as all Services are paid in full. You agree to pay interest on any unpaid balance from the date payable until paid at the highest lawful contract rate applicable, but never to exceed 18% per annum. In the event ECT2 employs an attorney for collection of any account, you agree to pay ECT2's reasonable and necessary attorney fees, plus all collection and court costs. All prices are exclusive of any federal, state, local, sales, use, excise or similar taxes imposed on the sale or use of the services, equipment, goods, product or material listed. You are responsible for payment of all taxes. Payment(s) shall be remitted with a copy of the invoice, attention: ECT2, Accounts Payable, PO Box 843044, Boston, MA 02284-3044; E- mail: acctpay@ect2.com.
- 5. Acceptance.** All orders from you are subject to final acceptance by ECT2 and to the conditions set out herein. Terms and conditions set forth in your order shall be null and void unless specifically accepted by ECT2 in writing. Performance by ECT2 pursuant to your order shall not constitute acceptance by ECT2 of your terms and conditions. Orders cannot be canceled, nor Goods, equipment, products or materials returned, by you under any circumstances without ECT2's written consent and upon terms which shall compensate and indemnify ECT2 against all loss.
- 6. Equipment/Goods delivery.** Unless otherwise stated in the Proposal, not less than ten (10) business days in advance of the date ECT2 intends to deliver the Goods and/or equipment to your site, ECT2 shall deliver written notice to you of the Goods and/or equipment availability and intended date of delivery ("Notification of Delivery"). You shall pay for all storage and handling costs for any Goods and/or equipment caused by any shipping delay or otherwise. Unless otherwise specified in the Proposal, the Goods and/or equipment shall be shipped to your site F.O.B. shipping point. All risk and liability for loss or damage to the Goods and/or equipment, for the injury or death of any person, for the loss of property and for all other risks and liabilities arising from the possession, use, transportation, or storage of the Goods and/or equipment shall pass to you upon placement of the Goods and/or equipment for shipment at the shipping point. All delivery charges, including freight, transit insurance, duties, and applicable taxes will be the responsibility of you. The failure to obtain insurance or the insufficiency of insurance limits shall not relieve you of any obligations herein. ECT2 shall not be liable for any delay in manufacture or delivery due to fires, strikes, delays in transportation, shortage of cars, shortage of fuel or other material, shortage of labor, demands or requirements of any Government or due to any other causes beyond the reasonable control of ECT2 or the manufacturer. You shall pay for all storage and handling costs for any Goods and/or equipment caused by any shipping delay or otherwise.
- 7. Inspection.** Inspection of the Goods and/or equipment by you is to be made at the time of delivery and at your expense. You shall immediately inspect all equipment to identify any evidence of damage associated with shipment to you. You shall immediately notify ECT2 and the carrier of any evidence of damage. Barring the occurrence of any significant damage to the Goods and/or equipment while in transit, you shall, in accordance with the implementation schedule contained in the Proposal, proceed with the proper installation and connection of the Goods and/or equipment to all required utilities and tie points as specified by ECT2.

8. **Equipment Start-up.** All analytical testing, if required, shall be arranged for and executed or paid for by you. Analysis of samples shall be conducted by a qualified analytical laboratory so that results can be promptly obtained and evaluated. All analytical test results shall be shared by you with ECT2.
9. **Confidentiality.** All plans, specifications and like material, provided to you under this Agreement, are now and shall remain the exclusive property of ECT2. You hereby agree to receive such materials with the understanding that the features and all aspects of all designs, drawings, engineering data and other technical or proprietary information remains the exclusive property of ECT2 and will be kept confidential. No part of said plans, specifications, blueprints or other like material, shall be used or reproduced, without the express written consent of ECT2, signed by one of its officers. Where disclosure of such material is required by federal, state or local laws, regulations, rules, orders or to be used as evidence in court involving the services, goods, equipment, products or material provided, you agree to notify ECT2 of the same and object to its production until ECT2 may reasonably respond in the proper forum.
10. **Ownership of Work Product.** All inventions, designs, drawings, sketches, surveys, designs, computer software, programs, manuals, data specifications, notebooks, technical and scientific data, and all photographs, negatives, reports, findings, recommendations, data and memoranda of every description relating thereto, as well as all copies of the foregoing, and any all instruments of service or products (including all software) prepared or obtained by ECT2 pursuant to the Services and/or the provision of Goods under this Agreement, that are or may be patentable, shall be the exclusive property of ECT2. Further, the ownership of all copyrights for all works made for hire prepared or obtained by ECT2 pursuant to the Services and/or provision of Goods under this Agreement shall remain with ECT2.
11. **Mechanical Warranty.** ECT2 hereby warrants to you the following as applicable based upon the scope of work identified in the Proposal:
- (a) The treatment system shall be free from defects in materials and workmanship, under normal and proper use, for a period of twelve (12) months from the date of delivery of the treatment system to the project site or fifteen (15) months from the date of Notification of Delivery, whichever occurs first. This warranty shall only be effective if the treatment system installation is conducted in accordance with guidelines and requirements contained in drawings or other engineering documents provided by ECT2, and the start-up of the treatment system is supervised or conducted by ECT2.
- (b) Any repairs or replacements that are required as a result of Your failure to store, operate and maintain the treatment system in accordance with the treatment system operations and maintenance manual or the result of misuse or neglect of the treatment system by You shall be for the account of You. No allowance shall be granted for repairs or alterations made by You without ECT2's prior written consent. The Mechanical Warranty shall not apply to parts which have been altered from their original state by either You or any third party.
12. **Goods Warranty.** ECT2 hereby warrants to you the following as applicable based upon the scope of work identified in the Proposal:
- (a) The Goods that are provided shall be of the kind and quality as set forth in the Proposal, new and of good and merchantable quality, free from defects in design, workmanship and material, and shall perform in accordance with the specifications and drawings, if any, referred to in the Proposal and/or the cover page of the Goods. All Goods shall at all times be subject to Your inspection but neither Your inspection nor failure to inspect shall relieve ECT2 of any obligations under this Good Warranty.
- (b) The Good Warranty excludes any remedy for damages, defects, deficiencies or failures in the Goods to the extent due to or caused by: (i) the negligence, abuse, willful misconduct, or neglect by You or a third party not under ECT2's control; (ii) any accident, not due to the fault of ECT2, following the delivery of the goods which is not itself attributable to a breach of the Good Warranty; (iii) the failure to store, operate and maintain any of the Goods in accordance with the written instructions of ECT2; (iv) any modifications, repairs or alterations to the Goods not performed or authorized in writing by ECT2; (v) consumable or wearable parts of any item of equipment subject to replacement as part of a program of normal or scheduled maintenance; or (vi) corrosion, erosion or abrasion; abnormal conditions of temperature, moisture or dirt; or deterioration or wear occasioned by chemicals.

(c) Notwithstanding the above Goods and Mechanical Warranties, unless stated in the Proposal, ECT2 does not warrant and/or guarantee the performance of the selected Goods referenced in the Proposal based upon the Goods' performance during any testing that was previously conducted by ECT2 for You.

13. **Limitation of Remedies.** To the fullest extent permitted by law, the total aggregate liability of ECT2, its parent company, officers, directors, and employees to Client, and anyone claiming by, through, or under Client, for any and all injuries, claims, losses, expenses, or damages whatsoever arising out of or in any way related to ECT2's Services and/or Goods, from any cause or causes whatsoever, including, but not limited to, negligence, errors, omissions, strict liability or contract, shall be limited to and shall not exceed the total compensation received by ECT2 under this agreement, or \$50,000, whichever is greater.
14. **Mutual Waiver of Consequential Damages.** Neither party, nor their parent, affiliated or subsidiary companies, nor the officers, directors, agents, employees, or contractors of any of the foregoing, shall be liable to the other in any action or claim for incidental, indirect, special, collateral, punitive, exemplary or consequential damages, including, but not limited to financial loss, loss of profits, loss of revenue, delay, disruption, loss of anticipated profits or revenue, loss of use of any structure, system or equipment, or non-operation or increased cost of operation arising out of or related to the Services and/or Goods, whether the action in which recovery of damages is sought is based upon contract, tort (including, to the greatest extent permitted by law, the sole, concurrent or other negligence, whether active or passive, and strict liability of any protected individual or entity), statute or otherwise.
15. **Governing Law.** This Agreement shall be solely governed and construed and enforced in accordance with the laws of the Commonwealth of Massachusetts, without regard to its conflict of laws rules. If any dispute relating to the Agreement cannot be resolved through good faith negotiation, you agree to submit and consent to the jurisdiction of the courts present in Massachusetts in any action brought to enforce (or otherwise arising from or relating to) this Agreement.
16. **Force Majeure.** ECT2 shall not be responsible for any delay or non-performance under the Agreement due to governmental regulation, labor disputes, terrorism, war or war-like actions, civil disturbances or riots, weather, fire, acts of God or any other causes beyond the reasonable control of ECT2.
17. **Waiver.** Delay in enforcing any or all of the above terms and conditions shall not constitute a waiver nor preclude any subsequent enforcement. Failure to take prompt action with respect to any act or omission contrary to these terms and conditions shall not constitute a waiver of any right with respect to such act or omission or any subsequent act or omission.

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END OF TERMS AND CONDITIONS