

# **CITY OF OBERLIN, OHIO**

## **ORDINANCE No. 19 - 42 AC CMS**

AN ORDINANCE AUTHORIZING THE CITY MANAGER TO ENTER INTO AN EQUIPMENT SUPPLY CONTRACT WITH TROJAN TECHNOLOGIES, INC. OF LONDON, ONTARIO, CANADA FOR THE PURCHASE OF A TROJAN UVSIGNA ULTRAVIOLET DISINFECTION SYSTEM FOR THE CITY OF OBERLIN WATER ENVIRONMENT PROTECTION FACILITY, WAIVING THE REQUIREMENT FOR COMPETITIVE BIDDING AND DECLARING AN EMERGENCY

WHEREAS, the City of Oberlin Water Environment Protection Facility (WEPF) provides comprehensive wastewater treatment services for the residents, businesses and institutions of the City of Oberlin in compliance with Ohio EPA Permit Number 3PD00025\*KD; and,

WHEREAS, the final stage of treatment prior to discharge to Plum Creek is the seasonal disinfection of effluent using ultraviolet light in accordance with said OEPA permit; and,

WHEREAS, the existing ultraviolet disinfection system at the WEPF is approaching the end of its useful life; and,

WHEREAS, in order to maintain compliance with said OEPA permit it is necessary that the ultraviolet disinfection system be replaced; and,

WHEREAS, there are few manufacturers of ultraviolet disinfection systems that are capable of meeting the needs of the WEPF; and,

WHEREAS, staff have conducted a comprehensive review and evaluation of several ultraviolet disinfection systems available from competing vendors to determine their effectiveness and compatibility with existing WEPF infrastructure; and,

WHEREAS, the City of Oberlin has determined that the Trojan Technologies, Inc. Trojan UVSigna Ultraviolet Disinfection System is the best product to meet the needs of the WEPF in that it will minimize the associated costs of engineering and construction associated with the installation of the equipment; it will minimize electrical consumption and the associated costs of operating said equipment; and it will reduce the maintenance and operational requirements associated with said equipment; and,

WHEREAS, Section II of the Oberlin City Charter provides that the powers of local self-government and those powers possessed by municipalities under the Constitution and laws of Ohio may be exercised in the manner prescribed in the Charter, or by ordinances of Council created thereby.

NOW, THEREFORE, BE IT ORDAINED by the Council of the City of Oberlin, County of Lorain, State of Ohio, not less than five-sevenths (5/7ths) of all members elected thereto concurring:

SECTION 1. That the City Manager is hereby authorized and directed to enter into a contract with Trojan Technologies, Inc. of London, Ontario, Canada for a Trojan UVSigna

Ultraviolet Disinfection System and all related equipment and services as specified in Trojan Technologies, Inc. Quote #220089 dated May 16, 2019 for the City of Oberlin Water Environment Protection Facility for the purchase price of \$282,980.00.

SECTION 2. That pursuant to the home rule authority reserved under Section II of the Oberlin City Charter, Council does hereby waive the requirement for competitive bidding.

SECTION 3. It is hereby found and determined that all formal actions of this Council concerning or relating to the adoption of this Ordinance were adopted in an open meeting of this Council and that all deliberations of this Council and of any of its committees that resulted in such formal action were in meetings open to the public in compliance with all legal requirements, including Section 121.22 of the Ohio Revised Code.

SECTION 4. That this Ordinance is hereby declared to be an emergency measure necessary for the immediate preservation of the public peace, health, and safety of the citizens of the City of Oberlin, Ohio, or to provide for the usual daily operation of a municipal department, to wit: to authorize the purchase of the Trojan UVSigna Ultraviolet Disinfection System as soon as possible to ensure the efficient operation of the Water Environment Protection Facility in accordance with its OEPA permit, and shall take effect immediately upon passage.

PASSED:        1<sup>st</sup> Reading: July 1, 2019 (E)  
                    2<sup>nd</sup> Reading: \_\_\_\_\_  
                    3<sup>rd</sup> Reading: \_\_\_\_\_

ATTEST:

  
\_\_\_\_\_  
BELINDA B. ANDERSON, MMC  
CLERK OF COUNCIL

  
\_\_\_\_\_  
BRYAN BURGESS  
PRESIDENT OF COUNCIL

POSTED: 07/01/2019

EFFECTIVE DATE: 07/01/2019

**SCOPE OF SUPPLY FOR OBERLIN WASTEWATER TREATMENT PLANT  
ULTRAVIOLET DISINFECTION EQUIPMENT – TROJANUVSigna™**

**Prepared for:** The City of Oberlin, OH – UV Upgrade

**Submitted by:** Trojan Technologies

**Trojan Quote:** 220089 (May 16, 2019)

**Design Criteria:**

Peak Design Flow:	11.5 MGD
Average Flow:	4 MGD
UV Transmission:	65 % (minimum)
Total Suspended Solids:	20 mg/L (30 Day Average, grab sample)
Discharge Limit:	126 <i>E.coli</i> /100 mL (30 Day Geometric Mean, grab sample)

We are pleased to submit the following scope of equipment based on the above criteria.

**The purchaser is responsible for reading all information contained in this Supply Contract. Trojan will not be held accountable for the supply of equipment not specifically detailed in this document. Detailed installation instructions are provided with the shop drawings and are available earlier upon request. Changes to this Scope of Supply that affect selling price will be handled through a change order.**

**Please refer inquiries to Trojan Manufacturer's Representative:**

Representative: Art Kimpton  
Firm: Pelton Environmental Products  
Phone: 440 838 1221  
Email: [akimpton@peltonenv.com](mailto:akimpton@peltonenv.com)

This proposal has been respectfully submitted by,  
**Trojan Technologies**



John Faber  
Regional Sales Manager

## **GENERAL CONFIGURATION**

The TrojanUVSigna equipment described in this Scope of Supply consists of one (1) duty channel with three (3) duty UV banks.

Unless otherwise indicated in this proposal all anchor bolts, conduit, conductors, local disconnects and transformers (if required) are the responsibility of the Installation Contractor and are not included in Trojan's Scope of Supply. Specific cable types listed below are for reference only. Selecting cables that are appropriate for the installation environmental conditions and in compliance with local code is the responsibility of the Installation Contractor.

Site to provide approved (engineered) anchor points for personnel to use as part of their fall restraint system around open channels. The anchor points must be positioned so that the preferred retractable lifeline of 8 ft (2.4 m) is of sufficient length to access the work at the channel. Refer to local safety regulation.

## **UV BANKS**

### **Trojan's Responsibility:**

Each bank supplied will consist of TrojanUV Solo Lamps™, quartz sleeves, supporting structures, ActiClean™ chemical/mechanical cleaning system and an automatic bank lifting mechanism. UV lamps are powered from an individual electric feed from a lamp driver located in a Power Distribution Center (PDC).

<b>Model and Make:</b>	TrojanUVSigna™
<b>Quantity:</b>	Three (3) UV Banks Each bank will be supplied with eight (8) UV lamps, eight (8) quartz sleeves, one (1) UV intensity sensor, one (1) ActiClean chemical-mechanical wiping system and one (1) automatic bank lifting mechanism
<b>Rating:</b>	Type 6P / IP68 (lamp sleeve assemblies)
<b>Approximate Weight:</b>	370 lbs

### **Installation Contractor's Responsibility:**

The Installation Contractor shall install, align, secure, and seal (grout) each UV bank and lifting system in the channel per the instructions provided. The Installation Contractor shall provide solid grating downstream of the UV bank to block out UV light. Please refer to the supplied Trojan-supplied drawings for details.

## **SYSTEM CONTROL CENTER**

### **Trojan's Responsibility:**

A System Control Center (SCC) shall be supplied to monitor and control the UV disinfection System. Trojan will provide a PLC I/O and soft address map to aid the Installation Contractor with integration of the UV PLC and SCADA system. Note: if Trojan is required to provide a managed switch in the SCC, the Plant's IT department or System Integrator will be responsible for configuring the switch to meet the Plant's security and traffic routing requirements. The UV SCC shall consist of the following:

<b>Quantity Supplied:</b>	One (1) SCC
<b>Location:</b>	Wall-Mount Panel
<b>Controller Type:</b>	Allen Bradley Compact Logix L33
<b>Operator Interface:</b>	Beijer X2 pro 12 HP (4X-Rated)
<b>Material / Rating:</b>	Painted Steel (Type 4, IP 66)
<b>Approximate Weight:</b>	200 lbs
<b>SCADA:</b>	Ethernet/IP
<b>Surge Protection:</b>	TVSS
<b>Panel UPS:</b>	15 minutes at 24 VDC

**Installation Contractor's Responsibility:**

The Installation Contractor to be responsible for mounting the SCC as indicated on the drawings. Unless otherwise indicated, the Installation Contractor to be responsible for the supply, installation and connection of the following at the SCC:

1. One (1) 120V, 60 Hz, 1 Phase, 2 Wire + GND, 1.8 kVA minimum power feed
2. One (1) bond link to plant ground, in accordance with applicable codes and standards
3. One (1) Modbus communication link, Belden 3106A (or equivalent), to PDCs (daisy chained)
4. One (1) Modbus communication link, Belden 3106A (or equivalent), to HSCs (daisy chained)
5. One (1) Cat 5e Ethernet communication link to SCADA
6. One (1) 4-20 mA analog shielded twisted pair from plant flow meter
7. One (1) discrete, 2 conductors, 20 gauge minimum, open command to the weir gate
8. One (1) discrete, 2 conductors, 20 gauge minimum, close command to the weir gate
9. One (1) discrete, 2 conductors, 20 gauge minimum, remote mode indication from the weir gate
10. One (1) 4-20 mA analog shielded twisted pair, 20 gauge minimum, gate position indication from the weir gate
11. One (1) 24V DC, 2 conductors + GND, power to each of the Level Sensor Monitors
12. One (1) 4-20 mA analog shielded twisted pair from each of the Level Sensor Monitors

**POWER DISTRIBUTION CENTERS**

**Trojan's Responsibility:**

The Power Distribution Center (PDC) distributes power to the UV lamps and shall consist of the following:

<b>Quantity Supplied:</b>	One (1) PDC
<b>Method of Cooling:</b>	Air-conditioning
<b>Material / Rating:</b>	304 Stainless Steel (Type 4X, IP 66)
<b>Approximate Weight:</b>	1213 lbs
<b>Surge Protection:</b>	TVSS

**Installation Contractor's Responsibility:**

The Installation Contractor to be responsible for setting in place and bolting the PDC in location. The Installation Contractor to be responsible for the supply, installation and connection of the following at the PDC:

1. One (1) 480Y/277 V, 60 Hz, 3 phase, 4 wire + GND, 27.4 kVA power feed with local disconnect to the PDC
2. One (1) bond link to plant ground, in accordance with applicable codes and standards (to underside of panel)
3. One (1) bond link from each UV bank to the corresponding PDC in accordance with the applicable drawings, specifications, codes, and standards
4. One (1) bank-in-place sensor cable (by Trojan) from each UV bank to the PDC
5. One (1) UV intensity sensor cable (by Trojan) from each UV bank to the PDC
6. One (1) Modbus communication link, Belden 3106A (or equivalent), from the SCC
7. One (1) discrete, 2 conductor, cable from level sensor control box for low water level signal
8. Installation and termination of lamp cables from the UV banks to the PDC. (Qty: 8 per UV Bank – supplied by Trojan)

## **HYDRAULIC SYSTEM CENTER**

### **Trojan's Responsibility:**

The Hydraulic System Center (HSC) houses the ancillary equipment required to operate the quartz sleeve cleaning system and automatic bank lifting mechanism.

<b>Quantity Supplied:</b>	One (1) HSC
<b>Materials / Rating:</b>	304 Stainless Steel (Type 4X, IP 66)
<b>Hydraulic Fluid:</b>	Mineral Oil
<b>Approximate Weight:</b>	500lbs
<b>Surge Protection:</b>	TVSS

### **Installation Contractor's Responsibility:**

The Installation Contractor shall be responsible for setting in place and bolting the HSC's as shown on the Trojan drawings. The HSC's must be located within 50 ft (15 m) of the furthest PDC. The Installation Contractor shall be responsible for the supply, connection and installation of the following at the HSC:

1. One (1) 480V, 3 phase, 3 wire + GND, 60 Hz, 2.5 kVA power feed with local disconnect
2. One (1) bond link to plant ground, in accordance with applicable codes and standards
3. One (1) Modbus communication link, Belden 3106A (or equivalent), from the SCC
4. Cut and crimp hydraulic hoses (coordination with Parker Store) (hoses and connections supplied by Trojan)
5. Connection of the hydraulic hoses, total of four (4) per UV bank

## **WATER LEVEL CONTROLLER**

Modulating Weir Gates (MWGs) shall be self-contained and shall be designed and manufactured by an experienced and reputable manufacturer, based on the AWWA C561 Standard for Fabricated Stainless Steel Slide Gates and AWWA C542 Standard for Electric Motor Actuators for Valves and Slide Gates in effect as of the date of this specification.

MWGs shall be designed for the following performance criteria:

- MWG actuation speeds shall be between 10" (255 mm) and 14" (356 mm) per minute
- MWG maximum design rate of change of flow shall be limited to 25% of the Peak Design Flow/Channel per minute, or alternatively, flow shall be ramped up (zero to peak) or down (peak to zero) in no less than 4 minutes
- MWG actuators shall employ AWWA compliant, S4-50% duty class motors with a rated minimum 900 starts per hour capability
- MWG actuators shall employ AWWA compliant, Class B, solid-state Thyristor based switchgear capable of at least 5,000,000 modulating steps before overhaul; electromechanical type actuators and controls are not permitted
- It is the responsibility of the Plant designers to ensure the stated performance criteria are acceptable for the plant process or to modify the design accordingly

### **Trojan's Responsibility:**

A level control device is required to maintain and control the effluent level in the channel regardless of flow rate.

<b>Quantity Supplied:</b>	One (1) Motorized Weir Gate
<b>Material of Construction:</b>	304 Stainless Steel
<b>Description:</b>	Whipps
<b>Actuator:</b>	AUMA SAR-10.1 Electric Actuator
<b>Material of Construction:</b>	304 SST
<b>Mounting Anchors:</b>	Supplied with each Gate
<b>Approximate Weight:</b>	1540 lbs
<b>Control Method:</b>	Digital Pulsed Open/Close Position Signals from the UV SCC

**Installation Contractor's Responsibility:**

The Installation Contractor to be responsible for setting in place, grouting and sealing the level control weir gate and the installation of the following connections at each weir gate:

1. One (1) 480V, 60 Hz, 3 phase, 3 wire + GND, 15 AMP power feed with local disconnect
2. One (1) discrete, 2 conductors, 20 gauge minimum, open command from the SCC
3. One (1) discrete, 2 conductors, 20 gauge minimum, close command from the SCC
4. One (1) discrete, 2 conductors, 20 gauge minimum, remote mode indication to the SCC
5. One (1) 4-20 mA analog shielded twisted pair, 20 gauge minimum, gate position indication to the SCC

**ULTRASONIC WATER LEVEL SENSOR**

**Trojan's Responsibility:**

Two ultrasonic level sensor and monitor panel will be supplied (per gate) to monitor channel effluent levels specifically for weir gate control. The transducer will be supplied with a sufficient length of cable to distribute to the monitor panel.

**Quantity Supplied:** Two (2) sensors with monitor panels

**Installation Contractor's Responsibility:**

The Installation Contractor shall be responsible for mounting the bracket and transducer in the UV channel and for mounting the monitor panel adjacent to the channel. Installation Contractor shall distribute the following cable/wiring between these two components and the SCC in appropriate conduit at each sensor:

1. One (1) 24V DC, 2 conductors + GND, power from the SCC to each Level Sensor Monitor
2. One (1) 4-20 mA analog shielded twisted pair from each Level Sensor Monitor to the SCC
3. One (1) communication link using 33 ft (10 m) of cable (supplied by Trojan) from each Level Sensing Transducer to the respective Level Sensor Monitor

**LOW WATER LEVEL SENSORS**

**Trojan's Responsibility:**

A Low Water Level Sensor is required downstream of the UV System to generate a low water level signal that will shut down and protect the UV System if the water level in the channel drops too low.

**Quantity Supplied:** One (1) electrode type water level sensor  
**Approximate Weight:** 10 lbs (panel)

**Installation Contractor's Responsibility:**

The Installation Contractor to be responsible for setting in place and bolting the water level sensor panel to the effluent channel wall as per Trojan's and Engineer's drawings.

**LEVEL SENSOR CONTROL BOX**

**Trojan's Responsibility:**

Trojan will provide a wall mounted Level Sensor Control Box 24 x 14 x 6 in to provide power and relays for low level sensors.

**Quantity Supplied:** One (1) Level Sensor Control Box  
**Material:** 304 Stainless Steel (Type 4X)  
**Approximate Weight:** 40 lbs

**Installation Contractor's Responsibility:**

The Installation Contractor to be responsible for mounting the Level Sensor Control Box as indicated on the drawings. The Installation Contractor shall also be responsible for supplying mounting hardware, watertight conduit and for the supply, installation and connection of the following at the Control Box:

1. One (1) 120 Volt, 1 phase, 2 wire + GND 72 VA power supply
2. One (1) discrete, 2 conductor cable from the Low Level Sensor to the level sensor control box
3. One (1) discrete, 2 conductor cable from the level sensor control box to the PDC

**CABLE TROUGH**

**Trojan's Responsibility:**

Trojan will provide 304 stainless steel cable troughs for routing of the lamp cables and hydraulic hoses from the PDC and HSC to the UV banks.

<b>Quantity Supplied:</b>	30 linear feet
<b>Material:</b>	304 Stainless Steel (Type 4X)

**DOCUMENTATION (SHOP DRAWINGS AND O&M MANUALS)**

The following documentation will be supplied by Trojan per the following schedule:

- One (1) electronic copy of Trojan Shop Drawing Submittals 4 - 6 weeks after receipt of written purchase order (hardcopies available upon request)
- One (1) electronic copy of Trojan Standard O&M manuals at time of equipment delivery (hardcopies available upon request)

**DELIVERY, START-UP AND TRAINING**

- Equipment shipped 16 – 18 weeks after approval of Shop Drawings.

**Installation Contractor's Responsibility:**

The Contractor is responsible for:

- Unloading of the components supplied by Trojan, storage of all components, if required in a clean dry environment
- Installing the equipment outlined in the scope of Supply in accordance with contract drawings, Trojan's shop drawings, instructions and installation checklist.
- Supplying all conduits and conductors and components per the sites state regulations and components indicated as supplied by others,
- Completing the Checklist and returned at least two (2) weeks prior to date requested for commissioning.

The following start-up services will be provided by Trojan-certified technicians:

- Up to two (2) days in one (1) trip for installation assistance. Additional assistance as required by phone or fax. Technical Assistance Center 1-866-388-0488 or [tac@trojanuv.com](mailto:tac@trojanuv.com)
- Up to six (6) days in two (2) trips for start-up and testing of the installed UV equipment.
  - If the Trojan's Certified Service Technician determines the Contractor work is not complete and the start-up cannot be completed in the allotted time a return visit will be scheduled at the Contractors expense.
- Up to one (1) day in one (1) trip for classroom and/or jobsite training for operations staff
  - If trainees are not available a return visit will be scheduled at the Contractors expense



**WARRANTY**

Trojan will warrant the equipment and parts for 12 months after start-up or 18 months after shipment, whichever comes first. Refer to attached Terms and Conditions for additional details.

- UV lamps shall be warranted for 15,000 hours prorated after 9,000 hours.
- Lamp drivers shall be warranted for 10 years, prorated after 1 year.

**SELLING PRICE**

**\$282,980**      **USD**

- Selling price does not include any duties or taxes that may be applicable.
- Freight included if destination is within North America.

**PAYMENT TERMS**

- 10% upon approval of Shop Drawings
- 85% upon delivery of equipment to job site
- 5% upon equipment acceptance or 60 days after delivery (whichever occurs first)
- Net 30 Days
- If UV System Start-up is required within 30 days of shipment, Trojan requires 95% payment unless agreed upon in writing before authorizing system Start-up.

**TERMS & CONDITIONS**

- See Trojan's Terms and Conditions attached.

CITY OF OBERLIN

Accepted by:  7.5.19  
Rob Hillard      Date  
City Manager

Approved as to form:  7/8/19  
Jon D. Clark      Date  
Law Director

### **Terms and Conditions Covering All Trojan Sales**

#### **1. CONSTRUCTION AND LEGAL EFFECT**

The sale by Trojan Technologies ("Trojan") to the purchaser ("Customer") of the goods, products, equipment (individually or collectively the "Equipment") and/or the services (the "Services") listed in any quotation, proposal, bid, scope of supply, and /or similar document, as may be amended by any applicable change agreed by Trojan (individually or collectively the "Quotation") will be solely upon the terms and conditions set out herein. These terms and conditions shall supercede all prior agreements and communications, written or oral, with respect to such sale. Any purchase order shall not be effective until accepted by Trojan, and any additional or different terms and conditions contained in any purchase order, order acknowledgement or other communication of the Customer, and any waiver or modification of any terms and conditions set out herein, shall be deemed objected to without effect and will not be binding on Trojan unless specifically consented to in writing by an authorized representative of Trojan. A purchase order accepted by Trojan shall constitute an agreement between Trojan and the Customer, the terms and conditions of which are set out herein. The receipt of these terms by a Customer following a purchase order not in response to, or inconsistent with, a Quotation, shall be deemed a notification of objection to all inconsistent terms in that purchase order.

#### **2. EQUIPMENT AND SERVICES SUPPLIED**

Trojan will supply only the specific Equipment and Services specifically listed in the Quotation. Trojan assumes no responsibility to supply other equipment or services.

#### **3. PRICES AND EXPIRATION**

Prices for the Equipment and Services are as specified in the Quotation. If Trojan's delivery of Equipment and/or Services surpasses one (1) year in length, then at least on an annual basis, or if changes to the Equipment or Services are requested or needed, the parties shall conduct good faith discussions regarding changes to the prices for the Equipment and/or Services, to reflect Trojan's increased costs for which Supplier shall be entitled to additional fair and appropriate compensation. Installation, maintenance and any other services which relate to the Equipment are not included unless specifically provided for in the Quotation. The amount of any present or future excise, sales, use, value-added or similar tax, duty or other governmental charge applicable to the production, sale, shipment or use of Equipment or Services will be the responsibility of Customer and will be in addition to the prices set out in the Quotation. Any Quotation is valid for ninety (90) days from issuance, unless specifically consented to in writing by an authorized representative of Trojan.

#### **4. PAYMENT**

4.1 Customer shall pay all invoiced amounts due to Trojan within 30 days from the date of Trojan's invoice. Late payments are subject to subject to a monthly late payment assessment of up to 1.5% of the outstanding balance per month. Notwithstanding the foregoing, if Trojan believes timely payments from Customer will not follow, and/or if the level of costs incurred by Trojan for custom work or pass-through items is high, and/or if lead times are long, as determined by Trojan in its sole discretion, then Trojan may require payment on different terms, including but not limited to prepayment in full. For the avoidance of doubt, the final 5% of the purchase price is due no later than 30 days following the Acceptance Date, regardless of any delays in start-up of the Equipment.

4.2 Where the Customer is responsible for any delay in shipment by Trojan, the date on which the Equipment is ready for shipment by Trojan may be treated by it as the Delivery Date for purposes of determining the time of payment of the purchase price. In such event, the Equipment ready for shipment shall be held at the cost of the Customer and the Customer will be responsible for reasonable storage and insurance expenses with respect to such Equipment.

4.3 Customer and Trojan both recognize that there is a risk of wire fraud when individuals impersonating a business demand immediate payment under new wire transfer instructions. To avoid this risk, Customer must

verbally confirm any new or changed wire transfer instructions by calling Trojan and speaking with Trojan's Credit Manager before transferring any monies using the new wire instructions. Both parties agree that they will not institute wire transfer instruction changes and require immediate payment under the new instructions but will instead provide a ten (10) day grace period to verify any wire transfer instruction changes before any outstanding payments are due using the new instructions.

#### **5. DELIVERY TERMS, PACKAGING, SHIPPING, SITE STORAGE AND HANDLING**

Unless otherwise specified in writing by the Customer and consented to in writing by an authorized representative of Trojan, terms of Equipment delivery shall be "Ex Works" at the point of shipment, and:

- (a) Equipment will be boxed or crated as determined appropriate by Trojan for protection against normal handling and there will be an extra charge to the Customer for additional packaging required by the Customer with respect to waterproofing or other added protection,
- (b) the manner and routing of shipments will be at Trojan's discretion,
- (c) responsibility for payment of shipping costs to the project site will be as specified in the Quotation,
- (d) any insurance to be arranged with respect to shipping of the Equipment will be as specified in the Quotation,
- (e) delivery of Equipment to the initial carrier will constitute delivery and title passing to the Customer and Equipment will be shipped at the Customer's risk; any claim of the Customer for loss or damage in transit must be placed with the carrier and pursued by the Customer, and
- (f) Customer has sole responsibility for off-loading, storage and handling of the Equipment at the site.

#### **6. DELIVERY**

6.1 Trojan's quotation will provide a firm date for delivery of the Equipment (the "Delivery Date") which Trojan will then use to establish the production schedule for the Equipment. The Delivery Date will then be binding on the Customer except for any changes agreed in writing between Trojan and Customer.

#### **7. CANCELLATION AND RETURN OF EQUIPMENT**

The whole or any part of this order for the Equipment may be cancelled only with the prior written consent of Trojan. If Trojan does consent to a cancellation, such consent will be given only upon payment of reasonable cancellation charges in an amount determined by Trojan. In addition, with respect to any Equipment which is returned on a cancellation consented to by Trojan, the Customer will pay Trojan's cost of placing the returned Equipment in a saleable condition, sales expenses incurred by Trojan in connection with such returned Equipment, a reasonable restocking charge and freight costs incurred in connection with the original shipment and in connection with returning such Equipment to Trojan, all in such amounts as are advised to the Customer by Trojan.

#### **8. ACCEPTANCE**

Customer shall have no longer than thirty (30) days following receipt of a shipment of Equipment to inspect the Equipment. Customer may reject Equipment, in whole or in part, where the inspection reveals the Products are damaged, or are materially defective in workmanship or material. If Customer fails to timely reject Equipment or places the Equipment into operational use, the Products shall be deemed accepted.

#### **9. START-UP**

9.1 For Equipment requiring start-up in the quotation, Trojan may request the Customer to provide a firm date for start-up of the Equipment (the "Start-Up Date"). Trojan may then schedule its technician to be on-site for the Start-up Date. The Start-up Date is binding except for any changes made as agreed between Customer and Trojan.

9.2 On the Start-up Date, Customer must have the Equipment and site ready, and must have paid all amounts then due and payable to Trojan.

9.3 Customer is the operator and in full control of its premises, including those areas where Trojan employees or contractors are performing service, repair and maintenance activities. Customer will ensure that all necessary

measures are taken for safety and security of working conditions, sites and installations during the performance of Services. Customer is the generator of any resulting wastes, including without limitation hazardous wastes. Customer is solely responsible to arrange for the disposal of any wastes at its own expense. Customer will, at its own expense, provide Trojan employees and contractors working on Customer's premises with all information and training required under applicable safety compliance regulations and Customer's policies. If Customer requires Trojan employees or contractors to attend safety or compliance training programs provided by Customer, Customer will pay Trojan the standard hourly rate and expense reimbursement for such training attended. The attendance at or completion of such training does not create or expand any warranty or obligation of Trojan and does not serve to alter, amend, limit or supersede any part of this Contract.

#### 10. EXCUSABLE DELAYS

Trojan shall not be liable for any failure to meet the Delivery Date or the Start-up Date and/or meet any other obligations hereunder if such failure is due to reason(s) beyond Trojan's reasonable control including, without limitation, acts or omissions of carriers, labour difficulties, shortages, strikes or work stoppages of any type, fire, accident, explosion, flood, defaults or delays of suppliers, governmental acts or omissions, acts of God, acts of civil or military authorities, incomplete or inaccurate information supplied by Customer or any other cause beyond Trojan's reasonable control. In any such event, the Delivery Date and Start-up Date and/or other obligation due date shall be extended on a day for day basis to the extent of such delay.

#### 11. WARRANTY

11.1 Trojan warrants the Equipment in accordance with its then-current warranty covering the specific Equipment ordered, generally under which Trojan warrants to the Customer that during the period ending 18 months after the Delivery Date or 12 months after the Start-up Date, whichever occurs first, Equipment which is manufactured by Trojan will be free from defects in material and workmanship and will function in accordance with the specifications specified in the Quotation.

11.2 This warranty shall not apply to any failure or defect which results from the Equipment not being operated and maintained in strict accordance with instructions specified in Trojan's Operation and Maintenance manual or which results from mishandling, misuse, neglect, improper storage, improper operation of the Equipment with other equipment furnished by the Customer or by other third parties or from defects in designs or specifications furnished by or on behalf of the Customer by a person other than Trojan. In addition, this warranty shall not apply to Equipment that has been altered or repaired after start-up by any one except:

- (a) authorized representatives of Trojan, or
- (b) Customer acting under specific instructions from Trojan.

All Equipment warranties set forth herein (and any related guarantees, performance bonds, and the like) shall only be enforceable if (a) all equipment is properly installed, inspected regularly and is in good working order, (b) all operations are consistent with Trojan recommendations, (c) operating conditions at the Customer site have not materially changed and remain within anticipated specifications, and (d) no reasonably unforeseeable circumstances exist or arise.

11.3 Customer must notify Trojan in writing within 5 days of the date of any Equipment failure. This notification shall include a description of the problem, a copy of the operator's log, a copy of the Customer's maintenance record and any analytical results detailing the problem. If Customer has not maintained the operator's log and maintenance record in the manner directed in the Operation and Maintenance manual, or does not notify Trojan of the problem as specified above, this warranty may, in Trojan's discretion, be invalid.

11.4 Customer will fully cooperate with Trojan, in the manner requested by Trojan, in attempting to diagnose and resolve the problem by way of telephone support. If the problem can be diagnosed by telephone support

and a replacement part is required, Trojan will either, at Trojan's expense, ship a repaired, reworked or new part to the Customer who will install such part as directed by Trojan or will direct Customer to acquire, at Trojan's expense, such part from a third party and then install such part as directed by Trojan.

11.5 If Trojan determines that the problem cannot be resolved by way of telephone support and/or shipment by Trojan, or acquisition by the Customer, of a replacement part for installation by the Customer, Trojan will send one or more persons to make an on-site inspection of the problem. If an on-site visit is made, Trojan personnel will evaluate the problem and repair or replace any Equipment determined to be in breach of this warranty. If the problem is not attributable to a breach of this warranty, Trojan reserves the right to invoice the Customer for this service.

11.6 Components of the Equipment which are manufactured by a third party but furnished to Customer by Trojan are warranted by the original manufacturer, only to the extent of the original manufacturer's warranty, and are not covered by this warranty.

11.7 This warranty is the exclusive remedy of the Customer for all claims based on a failure of or defect in the Equipment, whether the claim is based on contract (including fundamental breach), tort (including negligence), strict liability or otherwise. This warranty is lieu of all other warranties whether written, oral, implied or statutory. Trojan expressly disclaims any remedies of "cover" and any warranties implied by law, including but not limited to any warranty of merchantability or fitness for a particular purpose.

11.8 Lamp and lamp driver warranties, and obligations of Trojan concerning lamp replacements, are set out in separate lamp and lamp driver warranty documents.

#### 12. LIMITATIONS OF LIABILITY

12.1 Trojan does not assume any liability for monetary damages, personal injury or property damage caused by use or misuse of the Equipment. Trojan has no responsibility for the supervision or actions of Customer's employees or contractors or for non-Trojan items (e.g., chemicals, equipment) and disclaims all liability and responsibility for any loss or damage that may be suffered as a result of such actions or items, or any other actions or items not under Supplier's control. Trojan shall not in any event be liable for liquidated, penalty, special, incidental, indirect or consequential damages including, without limitation, lost profits, lost business opportunities, lost revenue or loss or depreciation of goodwill, even if it has been advised of the possibility thereof. Trojan's liability shall, in all instances, be limited to repair or replacement of Equipment in breach of the above warranty and shall not exceed the cost of such repair or replacement. This liability with respect to repair or replacement will terminate upon the expiration date of the above warranty.

12.2 In addition to the foregoing, in no event shall Trojan's liability exceed that portion of the purchase price actually paid to it.

12.3 This limitation of liability shall survive any termination of any agreement based on its Quotation.

#### 13. COMPLIANCE AND OTHER OBLIGATIONS

Trojan shall not be responsible for verifying that any agreement and/or the supply of Equipment and Services, is in compliance with all applicable laws, ordinances, regulations, codes and orders. If the Customer fails to notify Trojan in writing that the agreement or such supply is not in compliance with any applicable law, ordinance, regulation, code or order, the Customer shall be responsible for and hereby agrees to indemnify Trojan against all claims, demands, losses, liabilities, costs and expenses incurred by it as a result of such non-compliance. Unless otherwise expressly agreed, Customer is responsible for obtaining any required export or import licenses necessary for Equipment delivery. Customer will comply with all laws and regulations applicable to the installation or use of all Equipment, including applicable import and export control laws and regulations of the U.S., E.U. and any other country having proper jurisdiction, and will obtain all necessary export or import licenses in

connection with any subsequent export, re-export, transfer and use of all Equipment and technology delivered hereunder. Customer will not sell, transfer, export or re-export any Trojan Equipment or technology for use in activities which involve the design, development, production, use or stockpiling of nuclear, chemical or biological weapons or missiles, nor use Trojan Equipment or technology in any facility which engages in activities relating to such weapons. Customer will comply with all local, national, and other laws of all jurisdictions globally relating to anti-corruption, bribery, extortion, kickbacks, or similar matters which are applicable to Customer's business activities in connection with this Contract, including but not limited to the U.S. Foreign Corrupt Practices Act of 1977, as amended (the "FCPA"). Customer agrees that no payment of money or provision of anything of value will be offered, promised, paid or transferred, directly or indirectly, by any person or entity, to any government official, government employee, or employee of any company owned in part by a government, political party, political party official, or candidate for any government office or political party office to induce such organizations or persons to use their authority or influence to obtain or retain an improper business advantage for Customer or for Trojan, or which otherwise constitute or have the purpose or effect of public or commercial bribery, acceptance of or acquiescence in extortion, kickbacks or other unlawful or improper means of obtaining business or any improper advantage, with respect to any of Customer's activities related to this Contract. Trojan asks Customer to "Speak Up!" if aware of any violation of law, regulation or our Standards of Conduct ("SOC") in relation to this Contract. See <http://danaher.com/integrity-andcompliance> and [www.danaherintegrity.com](http://www.danaherintegrity.com) for a copy of the SOC and for access to our Helpline portal. Customer is not an agent or representative of Trojan businesses and will not present itself as such under any circumstance unless and to the extent it has been formally screened by Trojan compliance department and received a separate duly-authorized letter from Trojan Technologies setting forth the scope and limitations of such authorization.

#### 14. INSPECTION

Inspection of Equipment by the Customer or its representative at Trojan's plant may be permitted provided that it is conducted under principles of confidentiality and does not unduly interfere with Trojan's production workflow and that complete details of the desired inspection are provided to Trojan in writing with sufficient advance notice.

#### 15. PATENT INDEMNIFICATION

15.1 Trojan will not be liable with respect to any claim of patent or other intellectual property infringement made regarding any Equipment unless such claim is based on an assertion that Equipment manufactured by Trojan, in the form in which such Equipment is supplied to the Customer, infringes any United States or Canadian patent. Trojan's obligations hereunder shall not apply to Equipment modified, or used in an unauthorized manner, by the Customer or to the extent that infringement arises as a result of combining the Equipment with any other equipment, whether or not supplied by Trojan. Subject to the foregoing, provided that the Customer notifies Trojan promptly in writing of any such claim of infringement and authorizes Trojan to exercise sole control over the defence and/or settlement of any such claim, Trojan will indemnify the Customer against the reasonable expenses of defending such claim as well as any resulting damages finally awarded against Customer or agreed to in any settlement but only up to a maximum amount not exceeding the purchase price actually paid to Trojan for the allegedly infringing Equipment.

15.2 If an injunction is obtained against the further use of allegedly infringing Equipment, Trojan shall, at its option and expense, use its reasonable efforts to:

- (a) procure for the Customer the right to continue using the Equipment,
- (b) modify the Equipment so that it is no longer infringing,
- (c) replace the allegedly infringing Equipment with non-infringing Equipment, or

(d) refund the purchase price paid to Trojan for the Equipment, less reasonable depreciation as determined by Trojan.

15.3 The foregoing provisions constitute Trojan's sole responsibility and liability, and the Customer's sole remedy, with respect to actual or alleged infringement of patents or other intellectual property.

15.4 The Customer hereby agrees to indemnify Trojan against all claims relating to or resulting from any actual or alleged patent infringement by Trojan which arises out of the manufacture and/or supply by Trojan of Equipment manufactured according to a design and/or specifications furnished to Trojan by the Customer or on behalf of the Customer by a person other than Trojan.

#### 16. SPECIAL TOOLS, DIES, JIGS, FIXTURES AND PATTERNS

Any tools, dies, jigs, fixtures, patterns and similar items which are included or required in connection with the manufacture and/or supply of the Equipment will remain the property of Trojan without credit to the Customer. Trojan assumes the cost for maintenance and replacement of such items and shall have the right to discard and scrap any such item after it has been inactive for a minimum of one year, without credit to the Customer.

#### 17. INTELLECTUAL PROPERTY & SOFTWARE.

All Trojan contributions to the Equipment and Services, the results of the Services, and any other work Equipment designed or provided by Trojan hereunder may contain or result in statutory and non-statutory Intellectual Property, including but not limited to patentable subject matter or trade secrets; and all such Intellectual Property remains the sole property of Trojan; and Customer shall not disclose (except to the extent inherently necessary during any resale of Equipment sold hereunder), disassemble, decompile, or otherwise reverse engineer said contributions, or any results of the Services, or any work Equipment, or otherwise attempt to learn the underlying processes, source code, structure, algorithms, or ideas.

All licenses to Trojan's separately-provided software Equipment may be subject to the separate software license agreement(s) accompanying the software media. In the absence of such terms and for all other software, Trojan grants Customer only a personal, non-exclusive license to access and use the software provided by Trojan with Equipment purchased hereunder solely as necessary for Customer to enjoy the benefit of the Equipment. A portion of the software may contain or consist of open source software, which Customer may use under the terms and conditions of the specific license under which the open source software is distributed. Customer agrees that it will be bound by any and all such license agreements. Title to software remains with the applicable licensor(s).

#### 18. RECORDS & AUDITS

Unless otherwise specifically agreed in writing by an authorized representative of Trojan, neither the Customer nor any representative of the Customer shall have the right to examine or audit any books, records or accounts of Trojan; or be entitled to, or have control over, any engineering or production prints, drawings or technical data which Trojan, in its sole discretion, considers to be of a confidential nature.

#### 19. ASSIGNMENT

All rights and obligations of Trojan and the Customer will enure to the benefit of and be binding upon their respective successors and permitted assigns. The rights and obligations of Customer hereunder shall not be assignable without the prior written consent of Trojan. All rights and obligations of Trojan may be assigned in whole or in part to any Affiliate or to any person acquiring any assets of Trojan outside the ordinary course of business. An "Affiliate" shall mean any entity which controls, is controlled by or is under common control with Trojan, whether directly or indirectly. Any attempted assignment in violation of the provisions of this section shall be void.

#### 20. CONFIDENTIALITY

20.1 All technical information, specifications, drawings, documentation

and knowhow of every kind and description disclosed by Trojan to the Customer and which is identified by Trojan as confidential shall be deemed to constitute "Confidential Information" of Trojan unless such information:

- (a) becomes part of the public domain through no fault of the Customer,
- (b) is disclosed to the Customer by a third party without breach of any obligation or other restriction,
- (c) is known to the Customer at the time of disclosure and has been documented as such, or
- (d) is required to be disclosed by legal, judicial or administrative proceeding.

20.2 All Confidential Information shall be owned by, and remain the exclusive property of, Trojan.

20.3 All Confidential Information shall be held in confidence by the Customer and, if in any form of physical media, returned by the Customer to Trojan upon request. The Customer shall not:

- (a) reproduce the Confidential Information without the written consent of Trojan, or
- (b) use the Confidential Information for any purpose other than in connection with the operation and maintenance of the Equipment.

20.4 The Customer shall be liable for and shall indemnify Trojan against all claims, demands, liabilities, losses, costs and expenses arising from any failure to comply with the terms hereof relating to Confidential Information. The Customer acknowledges that monetary damages may not be adequate in the event of any such failure to comply and that Trojan shall be entitled to injunctive relief in the event of any such non-compliance.

## 21. GOVERNING LAW

All issues relating to the construction, validity, interpretation, enforcement and performance of this agreement and the rights and obligations of Trojan and the Customer hereunder shall be governed by the laws of the Province of Ontario and the federal laws of Canada applicable therein. Any provisions of the *International Sale of Goods Act* or any convention on contracts for the international sale of goods shall not be applicable to this agreement. The parties submit to and consent to the non-exclusive jurisdiction of courts located in the Province of Ontario.

## 22. MODIFICATION/WAIVER

These terms incorporate and/or replace all prior terms whether oral or written, and may not be changed by either party except by a writing signed by both parties. The failure by Trojan to enforce at any time any of the provisions of this contract, or to exercise any election or option provided herein, shall in no way be construed as a waiver of such provision or option, nor in any way affect the validity of this contract (or any part hereof), or the right of Trojan thereafter to enforce each and every such provision. If any provision hereof is held by a court of competent jurisdiction to be unenforceable the remaining terms and provisions shall be unaffected and remain in full force and effect.

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**Additional Terms and Conditions Covering Trojan Sales  
of Configured-to-Order Projects and Systems**

In addition to all terms and conditions above, the following Sections 104, 106, 108, and 109 apply to Trojan sales of Configured-to-Order Projects, Systems, and the like:

**104. PAYMENT**

Unless otherwise noted in the Quotation, 10% of the purchase price for the Equipment is due 30 days after approval of engineering submittals, 85% of the purchase price is due 30 days after the Delivery Date (as defined below) and 5% of the purchase price is due 30 days after the Acceptance Date (as defined below), provided that if the Start-Up Date is less than 30 days after the Acceptance Date, 90% of the purchase price is due on or before the Start-Up Date.

**106. DELIVERY**

106.1 Trojan will request the Customer to provide a firm date for delivery of the Equipment to the project site (the "Delivery Date") which Trojan will then use to establish the production schedule for the Equipment. The Delivery Date will then be binding on the Customer except for any changes made in accordance with the provisions below.

106.2 The Customer can request a rescheduling of the Delivery Date on one occasion only by notifying Trojan in writing not less than four weeks prior to the scheduled Delivery Date. The Customer may request that the Delivery Date be extended by a period up to six weeks, without penalty, but may not request that the Delivery Date be moved forward. The Customer may also request that the Delivery Date be extended beyond a six week period but, Trojan may not agree to such extension, beyond the maximum six week extension period.

106.3 Trojan may, in its sole discretion, agree to change the Delivery Date on more than one occasion or if less than four weeks' prior notice is provided of a requested change, but is under no obligation to do so.

106.4 Trojan reserves the right to reschedule the Delivery Date to a date prior to or subsequent to the scheduled Delivery Date in order to accommodate its shipping, production or other requirements. This right to reschedule will be applicable unless otherwise agreed in writing by an authorized officer of Trojan. Trojan will provide the Customer or its representative with a minimum of 24 hours notice of any such rescheduling.

106.5 Where any change to the Delivery Date is made at Customer's request, for all purposes with respect to the warranty and payment provided by Trojan in connection with the Equipment, the initial Delivery Date will be considered to be the Delivery Date regardless of any change later made to the Delivery Date.

**108. ACCEPTANCE**

108.1 During the period between the Delivery Date and the Start-up Date, the Customer shall prepare the Equipment and the project site for installation and start-up and, unless otherwise agreed in writing by an authorized representative of Trojan, shall complete acceptance testing with respect to the Equipment. The Equipment shall be deemed to be accepted on the earliest to occur of the following dates (the "Acceptance Date"):

(a) that date on which the Equipment can function in either manual or automatic operation and provide disinfection in accordance with criteria specified in the Quotation, or

(b) 60 days after the Delivery Date.

108.2 All amounts which remain owing by the Customer for the Equipment, including any amount which is specified to be payable on the Acceptance Date, will be paid by the Customer to Trojan within 30 days after the Acceptance Date, unless otherwise agreed in writing by an authorized representative of Trojan.

108.3 Written notification must be given by the Customer to Trojan within seven days after the Acceptance Date listing any outstanding deficiencies with respect to the Equipment and Trojan will use all reasonable efforts to correct such deficiencies promptly.

**109. START-UP**

109.1 Trojan will request the Customer to provide a firm date for start-up of the Equipment (the "Start-Up Date"). Trojan will then schedule its technician to be on-site for the Start-up Date. The Start-up Date is binding except for any changes made in accordance with the provisions below.

109.2 On the Start-up Date, Customer must have the Equipment and site ready as provided in the Installation Preparation Checklist contained in the Contractor Installation Package sent to Customer, and must have paid all amounts then due and payable to Trojan.

109.3 Customer can request a rescheduling of the Start-up Date by notifying Trojan in writing not less than three weeks prior to the Start-up Date. Customer may request that the Start-up Date be extended, but may not request that the Start-up Date be moved forward. Trojan requires a minimum extension period of two weeks between the existing Start-up Date and the requested new Start-up Date in order to reschedule its technician.

109.4 Trojan may, in its sole discretion, agree to reschedule the Start-up Date where a Customer requests less than a two week extension but is under no obligation to do so. In the event that Trojan does agree to less than a two week extension or that Customer requests more than two changes to the Start-up Date, Customer will be charged an administration fee in an amount determined by Trojan.

109.5 Trojan reserves the right to reschedule the Start-up Date to a date which is prior to or subsequent to the scheduled Start-up Date in order to accommodate its resource availability. This right to reschedule will be applicable unless otherwise agreed in writing by an authorized officer of Trojan. Trojan will provide Customer or its representative with a minimum of 72 hours notice of any such change to the Start-up Date.

109.6 In the event that Trojan's technician arrives at the project site and finds that the Equipment or the project site is not ready for start-up as defined in the Contractor Installation Package, or any amounts then due and payable to Trojan remain unpaid, Customer may either:

(a) provided all amounts then due and payable to Trojan have been paid, issue a purchase order for all costs involved in having Trojan correct the deficiencies, or

(b) have Trojan's technician leave the site and then reschedule the Start-up Date to a date when all deficiencies will be corrected and the Equipment will be ready for start-up as defined in the Contractor Installation Package.

If Customer selects this option, the cost of rescheduling will be not less than a minimum amount specified by Trojan, with the final cost being determined by Trojan based on its costs and expenses incurred in connection with the rescheduling.

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