

August 21, 2019



To: Mr. Elijah Williams, P.E.
Water Reclamation Manager
TZ Osborne WRF
2350 Huffine Mill Rd.
McLeansville, NC 27301

Alfa Laval Inc.
5400 International Trade Drive
Richmond, VA 23231

Subject: Greensboro, NC
Centrifuge Proposal
Alfa Laval Quote No. 0205540-R3

Dear Mr. Williams:

On behalf of Alfa Laval, Inc. and our local representative Heyward Incorporated, we thank you for the opportunity to offer our proposal for Alfa Laval Centrifuge equipment for sludge dewatering based on the following information:

REPLACEMENT OF TWO CURRENT OPERATING CENTRIFUGES

Two (2) ALDEC G3 125 Centrifuges, for the use of dewatering plant solids will come complete and will include the following:

- Modular frame complete with one-piece casing with hinges (left-hand or right-hand, to be determine at the time of drawings submittal)
- Cover shall come with hinges
- Rotating assembly complete with 30 kNm DD gearbox and pillow block bearings
- Abrasion Protection: Fully covered, tungsten carbide feed zone
- Grease lubricated bearings with automatic greasing system
- Main drive Motor: 150 Hp AC VFD Baldor Premium Efficiency
- Back drive Motor: 50 Hp AC VFD Baldor
- Main Drive VFD: ABB ACS880
- Back drive VFD: ABB ACS880
- Control of centrifuge cleaning during power loss or outage
- Vibration isolators, vibration and temperature sensors in main bearings
- Factory Paint System



- One (1) set required lubricants
- One (1) set of required spares which includes:
 - One (1) Complete set of main and conveyor bearings, including O-rings
- Freight to job-site, DDP (Incoterms 2010)

Two (2) Centrifuge Starter/Control Panels, which shall be a Custom UL-508 Labeled, NEMA 12, painted steel, floor mount enclosure, 72"H x 72"W x 24"D on 12 inch floor stand, w/HD Panel Supports, complete, assembled, prewired, programmed and shop tested including:

- 1-Enclosure Fan Cooling System, NEMA 12
- 1- Interior cabinet lighting w/convenience receptacle
- 1- 400A Main NF Disconnect Switch w/through door operator
- 3- Main Input Fast Acting Fuses
- 1- Transient Voltage Surge Suppressor (TVSS)
- 1- 480/120 Control Power Transformer w/primary and secondary fusing
- 1- ABB ACS880-01-240A-5 Main Drive VFD, 200HP, ND, 1240Amps, 480V variable torque, operator keypad, 24VDC I/O Option Kit, and Ethernet Comms.
- 1- ABB ACS880-01-077A-5 AC BackDrive VFD, 50HP, HD, 65Amps, 480V variable torque, operator keypad, DC Bus Fuses, 24VDC I/O Option Kit, Ethernet Comms.,
- 1- Common DC Bus Connection
- 5-120V Control Power Circuit Breakers
- 1 – Allen Bradley - PLC System
- 1- Ethernet Switch
- 1- IFM Efezor VSE002 Vibration Monitor Control Power On Indicating Light
- 1- Allen Bradley 24VDC Power Supply/UPS
- 1- Illuminated 24VDC Power On/Inhibit Selector Switch
- 1- Illuminated Alarm Present/Acknowledge Pushbutton
- 1- Illuminated Estop Active/Reset Request Pushbutton
- 1- Alarm Sounder with LED Light
- 1- Terminal Strip for external control wiring terminations

Two (2) Centrifuge Operator Panels, which shall be a Custom UL-508 Labeled, NEMA 4X, 304 SS, wall mount enclosure, 24"H x 24"W x 8"D complete assembled, prewired, and shop tested including:

- 1- Allen Bradley 15" PanelView 7000
- 1- Illuminated Alarm Present/Acknowledge Pushbutton
- 1- Illuminated Estop Active/Reset Request Pushbutton
- 1- Alarm Sounder with LED Light
- 1- Terminal Strip for external control wiring terminations

One (1) Lot of the following:

- Removal of existing decanters (for Owner disposal)
- Removal of existing control panels (for Owner disposal)



- Decanter installation labor
- Subframe fabrication labor
- Piping and sheet metal modification labor
- Electrical installation labor
- Control panel termination labor
- Project management labor
- Structural engineering labor (For subframe)
- Documentation labor
- Stainless steel subframe
- Modified discharge chute
- Rigid aluminum conduit and fittings
- Wire and cable as needed
- 480/120vac wire needed
- DC cable as needed

One (1) Lot of flexible connectors

- Two (2) Feed Flexible Connection: 3", 150# Flange x 3" suction discharge hose x 24" long
- Two (2) Polymer Flexible Connection: 1" FBSP x 1" MNPT x 24" long
- Two (2) Solids Flexible Connection: 8" tall rubber boot, flanged top and bottom
- Two (2) Centrate Flexible Connection: 8" tall rubber boot, flanged top and bottom
- Two (2) 3" 120V motorized ball valve, NEMA 4X – high speed flushing
- Two (2) 2" 120V motorized ball valve, NEMA 4X – low speed flushing

Also included with pricing:

- Warranty as described below
- Up to 12 days including three (3) round trips of service time for
 - Start-up
 - Testing
 - Classroom and hands-on training as required by City staff
- Submittals and O & M Manuals
- Required Tools including bowl lifter and conveyor lifter

Not included in pricing:

- Polymer system
- Sludge feed system
- Removal and installation of the following:
 - Polymer system
 - Sludge feed system



- Dry cake conveyors
 - Other ancillaries not mentioned above
- Flow meters and Pressure gauges
- Conveyor and/or Diverter gate
- Feed pump and Grinder/Macerator
- Laboratory Fees
- Taxes and bonds

Control of centrifuge during power loss or outage

Control of centrifuge during power loss or outage will allow the centrifuge to run through a short duration power blip, generally defined as 3-5 seconds before starting a shutdown sequence. If power is restored during this time the feed pump and polymer pump will not shut down and production will continue.

Should the power not be restored during this interval, the control system must allow the centrifuge to be brought to a stop in a normal shutdown mode (as if it had power), maintaining the differential speed during the coast down period. This system will allow the centrifuge to scroll the solids out and be available for an immediate restart, once power is restored.

ALTERNATIVE: REPLACEMENT OF TWO CENTRIFUGES

PRICE FOR THE REPLACEMENT OF TWO CENTRIFUGES WITH TWO ALDEC G3 125 AS DESCRIBED ABOVE	\$1,948,000.00 One Million Nine Hundred Forty-Eight Thousand dollars
PRICE VALIDITY	60 DAYS
PAYMENT TERMS	10% upon Submittal Approval, NET 30 days 85% upon Delivery, NET 30 days 5% upon Final Acceptance, NET 30 days



ESTIMATED SCHEDULE

TZO CENTRIFUGE REPLACEMENT FURNISH AND INSTALL PROJECT			
PROJECT SCHEDULE Assuming a NTP of November 1, 2019)			
ITEM	DURATION	BEGIN	END
SUPPORT SYSTEMS ENGINEERING Polymer System, Sludge Feed Pumps	3-MONTHS	Concurrent	Concurrent
FURNISH AND INSTALL PROJECT DOCUMENTS GSO/Alfa Laval contract, GSO/Arcadis contract	3-MONTHS	AUG, 2019	OCT, 2019
FURNISH AND INSTALL PHASE			
MANUFACTURER DESIGN PERIOD	3-MONTHS	NOV, 2019	JAN, 2020
SHOP DRAWINGS/ REVIEW/ APPROVAL Partial submittals can overlap timing	2-MONTHS	JAN, 2020	FEB 2020
FABRICATION	8-MONTHS	NOV, 2019	JUN, 2020
INSTALLATION	4-MONTHS	JUL, 2020	OCT, 2020
START-UP/ COMMISSIONING	2-MONTHS	NOV, 2020	DEC, 2020
OVERALL, TIP-TO-TOE PROJECT DELIVERY	17-MONTHS	AUG, 2019	DEC, 2020

NOTES OF CLARIFICATION:

1. Warranty covers defects in materials and workmanship for Thirty-six (36) months after startup or beneficial use or forty-two (42) months after shipment whichever comes sooner. Alfa Laval reserves the right to review operating and maintenance records to ensure compliance. Warranty does not include routine maintenance or wear items.
2. Service time for start-up assistance is included with this price. Any additional service time resulting from non-warranty delays will be charged at the rate in effect at the time of service.
3. The process performance (cake solids, loading, hydraulic throughput, etc.) achieved by the centrifuge can be guaranteed after confirmation of the quality of the feed sludge through the analysis of a representative sample.
4. Anything not explicitly stated in this proposal is not included.



If you have any questions or require any additional information, please contact our local representative Tom Bishop with Heyward Incorporated at 704-583-2305.

Sincerely,

Mark Schlitzkus

Mark Schlitzkus
Regional Sales Manager
Alfa Laval, Inc.

cc: Tim Bishop, Heyward Incorporated
Sipke Verbeek, Alfa Laval
Lola Guerra, Alfa Laval



TERMS AND CONDITIONS OF SALE

These Terms and Conditions of Sale ("Terms and Conditions") apply to all quotations, orders, and contracts for Alfa Laval Inc. products (hereafter "Equipment") and associated services ("Services") As used in these Terms and Conditions, the word "Equipment" includes all hardware, parts, components, software and options.

1. **ACCEPTANCE:** Our sale to you is limited to and expressly made conditional on your assent to these Terms and Conditions and, if applicable, on the attendant quotation, both of which form a part of the contract between us and which supersede and reject all prior agreements, representations, discussions or negotiations, whether written or oral, with respect to this sale and any conflicting terms and conditions of yours, whether or not signed by you. Any terms and conditions contained in your purchase order or request for quotation or other form which are different from, in addition to, or vary from these Terms and Conditions are expressly rejected, shall not be binding upon us, and are void and of no force or effect. These Terms and Conditions may not be changed except by the written agreement of both parties.
2. **PRICES:** Unless otherwise specified in writing, all quoted prices are in U.S. Dollars and are firm for thirty (30) days from the date of offer. Prices quoted are exclusive of taxes, freight and insurance, and you agree to pay any and all sales, revenue, excise or other taxes (exclusive of taxes based on our net income) applicable to the purchase of Equipment. If you claim an exemption from any such taxes, you shall provide us with a tax exemption certificate acceptable to the taxing authorities.
3. **DELIVERY:** Dates for the furnishing of Services and/or delivery or shipment of Equipment are approximate only and are subject to change. Quoted lead times are figured from the date of receipt of complete technical data and approved drawings as such may be necessary. We shall not be liable, directly or indirectly, for any delay in or failure to deliver caused by carriers or delays from labor difficulties, shortages, strikes or stoppages of any sort, failure or delay in obtaining materials from ordinary sources, fires, floods, storms, accidents, or other acts of God or *force majeure*, by any statute, regulation, administrative order or decree or order or judgment of a court of law or other causes beyond our reasonable control. Unless otherwise specifically agreed in writing by us, in no event shall we be liable for any damages or penalties whatsoever, or however designated, resulting from our failure to perform or delay in performing due to any of the causes specified in this paragraph 3.
4. **SHIPMENT, RISK OF LOSS, TITLE:** All sales are made F.O.B. Alfa Laval shipping point, unless otherwise noted. Duty, brokerage fees, insurance, packing and handling as applicable are not included unless otherwise noted. Our liability for delivery ceases upon making delivery of Equipment to the carrier at the shipping point in good condition. The carrier shall be your agent. Risk of loss shall pass to you upon such delivery. Regardless of the delivery term specified, we shall retain title to the Equipment until final payment thereof has been made.
5. **CREDIT AND PAYMENT:** Payment terms are (30) days net, unless agreed otherwise by us in writing. *Pro rata* payments shall become due with partial shipments. Any discount period which may be granted by us begins on the invoice date and all payments are due 30 days after the invoice date. All payments shall be made without deduction, deferment, set-off, lien or counterclaim of any nature. All amounts due not paid within 30 days after the date such amounts are due and payable shall bear interest at the lesser of 1.5 percent per month or the maximum rate of interest allowed by law. We reserve the right at any time to suspend credit or to change credit terms provided herein, when, in our sole opinion, your financial condition so warrants. Failure to pay invoices when such invoices are due and payable, at our election, shall make all subsequent invoices immediately due and payable irrespective of terms, and we may withhold all subsequent deliveries until the full account is settled. We shall not, in such event, be liable for delay of performance or nonperformance of contract in whole or in part subsequent to such event.
6. **SECURITY AGREEMENT:** You hereby grant us a security interest in the Equipment, including a purchase money security interest, and in such materials, proceeds and accessories thereof, to secure payment of the purchase price of the Equipment. You authorize us to file or record a purchase order or copy thereof or any UCC financing statement showing our interest in the Equipment in all jurisdictions where we may determine filing to be appropriate, and you agree to sign all such documents reasonably related thereto promptly following our request. You will not encumber the Equipment with any mortgage, lien, pledge or other attachment prior to payment in full of the price therefor.
7. **CANCELLATIONS AND CHANGES:** Orders which have been accepted by us are not subject to cancellation or changes in specification except upon prior written agreement by us and upon terms that will indemnify us against all losses resulting from or arising out of such cancellation or change in specifications. In the absence of such indemnification, we shall be entitled to recover all damages and costs of whatever nature permitted by the Uniform Commercial Code.
8. **DEFERRED SHIPMENT:** If shipment is deferred at your request, payment of the contract price shall become due when you are notified that the Equipment is ready for shipment. If you fail to make payment or furnish shipping instructions we may either extend the



time for so doing or cancel the contract. In case of deferred shipment at your request, storage and other reasonable expenses attributable to such delay shall be payable by you.

9. **EQUIPMENT WARRANTY AND REMEDY:**

(a) For new Equipment only, we warrant to you that the Equipment that is the subject of this sale is free from defects in design (provided that we have design responsibility), material and workmanship. The duration of this warranty is Thirty-six (36) months from start-up or forty-two (42) months from delivery to you, whichever occurs first (the "Warranty Period"). If you discover within the Warranty Period a defect in design, material or workmanship, you must promptly notify us in writing. Within a reasonable time after such notification, we shall repair, replace, or, at our option, refund you the price of the defective Equipment or part thereof.

(b) For repairs, parts and Services provided by us, we warrant to you that the repairs, parts and Services we provide to you will be free from defects in material and workmanship. The duration of this warranty is ninety (90) days from as applicable (i) the date the Equipment which required the repairs, parts or Services is returned to you by us, (ii) the date of your receipt of the part, or (iii) the date of completion of the repair or other Services, if performed at your facility. If during this ninety-day period you discover a defect in the repairs, parts or Services you must promptly notify us in writing, and we shall correct such defect with either new or used replacement parts or reperform the Services as applicable. If we are unable to correct the defect after a reasonable number of attempts, we will provide a refund of the price paid for the defective repair, parts or Services.

(c) All warranty service is subject to our prior examination and approval and will be performed by us at your facility or at service centers designated by us. All transportation to and from the designated service center will be at our expense. The remedies set forth above are your exclusive remedies for breach of warranty. Unless otherwise agreed in writing by us, our warranty extends only to you and is not assignable to or assumable by any subsequent purchaser, in whole or in part, and any such attempted transfer shall render all warranties provided hereunder null and void and of no further force or effect.

(d) The warranties set forth above are inapplicable to and exclude any product, components or parts not manufactured by us or covered by the warranty of another manufacturer. We shall have no responsibility for defects, loss or damage to the extent caused by (i) normal wear and tear, (ii) your failure to follow all installation and operation instructions or manuals or to provide normal maintenance, (iii) repairs or modifications by you or by others not under our direct supervision, or (iv) a product or component part which we did not design, manufacture, supply or repair.

(e) **DISCLAIMER OF IMPLIED WARRANTIES.** THE WARRANTIES SET FORTH ABOVE AND IN SECTION 12 BELOW ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

10. **LIMITATION OF LIABILITY:** In no event shall we be liable, and you hereby waive any claims against us and release us from liability to you, for any indirect, special, punitive, incidental, or consequential damages whatsoever based upon breach of warranty, breach of contract, negligence, strict tort, or any other legal theory. In no circumstance, shall we be liable for, however such damages are characterized, loss of profits, loss of savings or revenue, loss of use of the Equipment or any associated equipment, cost of capital, cost of any substitute Equipment, facilities or services, downtime, or loss of prospective economic advantage. OUR AGGREGATE LIABILITY FOR FAILURE TO PERFORM, BREACH OF WARRANTY OR BREACH OF OTHER CONTRACTUAL OBLIGATIONS SHALL NOT EXCEED THE TOTAL PRICE PAID TO US FOR THE EQUIPMENT AND SERVICES THAT ARE THE SUBJECT OF ANY CLAIM BY YOU.

11. **OWNERSHIP:** All drawings, designs, specifications, data and other proprietary rights supplied by us (including without limitation in connection with the Equipment) have been prepared or assembled by us and are (and shall remain) exclusively our property, and upon our request you agree to execute any additional documents needed to give effect to the foregoing. Such drawings, designs and specifications have been furnished in order to provide full documentation and on the condition that they shall not be disclosed, reproduced or copied in any manner whatsoever, in whole or in part, except for your internal use as necessary, and upon the further condition that, as our sole property, they shall not be used for furnishing information and/or disclosed, in whole or in part, to others or otherwise for any purpose not specifically authorized in a writing signed by one of our corporate officers.

12. **PATENT INFRINGEMENT**

(a) We make no express or implied warranties of non-infringement with respect to the Equipment. We will, however, defend, indemnify and hold you harmless from any third party apparatus claims based upon an issued U.S. patent to the extent such claim relates to the Equipment supplied and sold to you; provided, however, that we undertake no indemnification in respect of third-party rights (i) where the alleged patent infringement is based upon or related to any method, process or design claims in third-party U.S. patents, any combination of the Equipment with other equipment not supplied by us, or any modifications of the Equipment made by you and not approved by us, or (ii) to the extent the alleged infringement is directly attributable to the negligence or intentional misconduct of you or otherwise for which you are obligated to indemnify us for under paragraph 12(c).



(b) We shall assume defense of a claim at our expense in accordance with these Terms and Conditions, provided you shall notify us within 30 days of your receipt of notice of an alleged third-party claim that you believe would entitle you to patent infringement indemnification pursuant to paragraph 12(a). You acknowledge and agree that we shall have the sole right to settle or otherwise compromise such a third-party claim, including but not limited to the right to either (i) modify the Equipment to avoid infringement if you are agreeable to the modification, (ii) repurchase the Equipment from you at a price equal to the then-current fair market value of the Equipment, or (iii) secure rights by assignment or license to permit continued use of the Equipment.

(c) If a third party charges us with patent infringement relating to Equipment sold by us to you, we shall have the right to either (i) modify the Equipment to avoid infringement if you are agreeable to the modification, (ii) repurchase the Equipment from you at a price equal to the then-current fair market value of the Equipment, or (iii) secure rights by assignment or license to permit continued use of the Equipment. If a third party charges us with patent infringement on the bases set forth in paragraph 12(a)(i) or (ii), you shall indemnify and hold us harmless for all expenses as well as any awards of damage assessed against us, and, without limiting any of our other rights and remedies available at law or in equity, we shall also have the right to modify or repurchase the Equipment or to secure rights for continued use by way of assignment or license as set forth in this paragraph.

13. **INSPECTION:** Upon prior written notice, you may make reasonable inspections of Equipment at our facility. We reserve the right to determine the reasonableness of the request and to select an appropriate time and location for such inspection. You agree to execute appropriate confidentiality provisions upon our request prior to visiting our facility. All costs of inspection shall be solely determined by us and shall be payable by you. No inspection or expediting by you at the facilities of our suppliers is authorized.

14. **SOFTWARE PROVISIONS:** If software is provided hereunder (whether such is integrated into the Equipment or otherwise operates alongside the same), you are hereby granted a non-exclusive, non-sublicensable, non-transferable, royalty free license to access and use such software as provided and as intended with our Equipment. Without limiting the foregoing, under the foregoing license you may specifically: (i) use our software in machine readable object code only and only with the Equipment provided; (ii) copy our software into any machine readable object code form solely for back up purposes in support of your use of our software on the Equipment provided in accordance with these Terms and Conditions; and (iii) create one additional copy of the software for archival purposes only. This license may only be assigned, sublicensed or otherwise transferred by you with our prior written consent. You hereby recognize and acknowledge that the software provided to you hereunder comprises valuable trade secret and/or copyright property of Alfa Laval (or its licensors) and you covenant that you will take adequate precautions against access to the software by, or disclosure of the software to, anyone not authorized hereunder to use or have access to the software as contemplated herein. The software is subject to the confidentiality obligations set forth below in paragraph 15.

15. **CONFIDENTIALITY:** Subject to any non-disclosure or confidentiality agreement already in effect between us, any drawings, data, software or other information exchanged between us is proprietary or confidential to us and shall not be used or disclosed by you without our prior written consent. Confidential information shall not be any information that (i) is known previously to you under no obligation of secrecy; (ii) becomes known to the public through no breach of an obligation of secrecy by you; or (iii) is independently developed by you without use or reference to any of the confidential information or materials provided to you by us.

16. **INAPPLICABILITY OF CISG:** The parties specifically agree that the United Nations Convention on Contracts for the International Sale of Goods shall not apply to any sale or order or the contract between us.

17. **GOVERNING LAW and VENUE:** These Terms and Conditions and any dispute or claim arising out of or related to an order or the contract between us shall be finally decided in accordance with the laws of the Commonwealth of Virginia, without giving effect to the provisions thereof relating to conflict of laws. You agree that the venue for any such dispute shall lie in the United States District Court for the Eastern District of Virginia, Richmond Division. In the event that federal jurisdiction cannot be established pursuant to 28 U.S.C. §§ 1331 or 1332, the venue for any such dispute shall lie in the Circuit Court of Henrico County, Virginia. You expressly submit and waive any objection to the sole and exclusive jurisdiction of such courts.

18. **GENERAL:** All previous agreements or understandings between us, either oral or written, with regard to the subject order, with the exception of a pre-existing non-disclosure agreement between us, are void and these Terms and Conditions constitute the entire agreement between us with respect to the matters addressed herein. Neither of us shall assign an order or contract to which these Terms and Conditions apply without the prior written consent of the other party, which consent shall not be unreasonably withheld. If any provision of these Terms and Conditions is held to be invalid or unenforceable, such holding shall not affect the validity or enforceability of any other provision herein. No waiver by either of us of any default or breach by the other party will operate as or be deemed a waiver of any subsequent default or breach.