

Central Valley Regional Water Quality Control Board

8 May 2015

J. Price, Warden
Deuel Vocational Institution
California Department of Corrections
P.O. Box 400
Tracy, CA 95378-0004

NOTICE OF VIOLATION OF CLEANUP AND ABATEMENT ORDER R5-2015-0704, CALIFORNIA DEPARTMENT OF CORRECTIONS, DEUEL VOCATIONAL INSTITUTION, SAN JOAQUIN COUNTY

The California Department of Corrections and Rehabilitation (Discharger) discharges treated wastewater from its Deuel Vocational Institution (Facility) to Deuel Drain and is regulated by Waste Discharge Requirements (WDRs) Order R5-2014-0014 (NPDES CA0078093) and Cleanup and Abatement Order (CAO) R5-2015-0704.

The CAO was issued to the Discharger due to an excessive number of exceedances of the chronic toxicity trigger, which is attributed to elevated influent electrical conductivity to the Facility. Additionally, violations of nitrate plus nitrite effluent concentrations are attributed to the damaged membrane bioreactor (MBR) modules due to inadequate maintenance. The CAO requires that the Discharger make Facility improvements, submit technical reports, and progress reports. A review of our records shows that the Discharger has not submitted the following reports as required by CAO R5-2015-0704:

Report Title	Due Date	CIWQS Violation ID
First Quarter 2015 Progress Report	30 April 2015	990645
RO Plant Spare Parts Status Report	1 May 2015	990646
MBR Modules Replacement Time Schedule	1 May 2015	990647

Non-submittal of technical reports is a violation of the CAO. Failure to comply with the CAO may result in the assessment of administrative civil liability up to \$5,000 per violation per day, pursuant to Water Code section 13350. **As of the date of this Notice, the maximum liability for delinquent monitoring reports is \$110,000.** We will not recommend further enforcement action if the missing reports are submitted **immediately**.

The Discharger has been providing 24-hour notification when the Reverse Osmosis (RO) plant is taken off-line for maintenance; however, the notifications have not included an estimated time for when the RO plant will return to operation. In the event that the RO plant is off-line, the Discharger's notification must include an estimated timeline for when the plant will return to operation. If the Discharger cannot anticipate when it will return to operation, then the Discharger must provide a daily status report via email to Wendy Wyels, Kari Holmes, and Mohammad Farhad until the RO plant is operational.

Board staff would like to remind the Discharger that the Facility's *Operation and Maintenance (O&M) Manual and Standard Operating Procedures (SOPs)* is due on **1 June 2015**.

If you have any questions, please contact Mohammad Farhad at (916) 464-1181 or mfarhad@waterboards.ca.gov.



KARI HOLMES, P.E.

Senior Water Resource Control Engineer
NPDES Compliance and Enforcement Unit

cc: Joseph Beasley, Associate Warden, Deuel Vocational Institution, Tracy
Terry Bettencourt, Correctional Plant Manager, Deuel Vocational Institution, Tracy
Jamie Rodriguez, Chief Engineer, Deuel Vocational Institution, Tracy
Pedro Reyes, California Department of Corrections and Rehabilitation, Rancho Cordova
Jeff Stanley, California Department of Corrections and Rehabilitation, Rancho Cordova
Terri Madia, California Department of Corrections and Rehabilitation, Rancho Cordova
Fred Cordano, California Department of Corrections and Rehabilitation, Rancho Cordova
Todd Poston, California Department of Corrections and Rehabilitation, Rancho Cordova
Edward Vasconcellos, Deuel Vocational Institution, Tracy
Mark Hardcastle, Regional Manager, Facilities Management, CDCR, Rancho Cordova
Donald Struckman, Staff Counsel, California Department of Corrections and Rehabilitation, Rancho Cordova
Vanessa Young, Staff Counsel, State Water Resources Control Board, Office of Enforcement, Sacramento

Farhad, Mohammad@Waterboards

From: Holmes, Kari@Waterboards
Sent: Monday, May 11, 2015 12:27 PM
To: Wyels, Wendy@Waterboards; Farhad, Mohammad@Waterboards
Subject: FW: Deuel Vocational Institute - Notice of Violation Letter Dated May 7, 2015
Attachments: DVI - 1st Quarterly Report 2015 - R5-2015-0704.pdf; Response To K. Holmes - (5-11-2015) - R5-2015-0704 - Attachments.pdf; Response To K. Holmes - (5-11-2015) - R5-2015-0704.pdf; CAB R5-2015-0704

From: Pedro Reyes [<mailto:pedro.reyes@cdcr.ca.gov>]
Sent: Monday, May 11, 2015 11:45 AM
To: Holmes, Kari@Waterboards; CentralValleySacramento
Cc: Price, Jerome@CDCCR; Vasconcellos, Edward@CDCCR; Cordano, Fred@CDCCR; Struckmann, Donald@CDCCR; Poston, Todd@CDCCR; Stanley, Jeff@CDCCR; Bettencourt, Miles (Terry)@CDCCR; Madia, Teri@CDCCR; Young, Vanessa@Waterboards
Subject: Deuel Vocational Institute - Notice of Violation Letter Dated May 7, 2015

Ms. Holmes,

Attached please find a response to your letter dated May 7, 2015, the missing 2015 Quarterly Report, and e-mail confirmations for the RO Plant Spare Parts Status Report, and the MBR Modules Replacement Time Schedule. Due to technical difficulties with my workstation and the internal network, the attachment of the Quarterly Report did not take place. Effective today, notifications to the Water Board will include date of failure and anticipated date of return to operation.

Date of Title of Submittal	May 11, 2015 – Response to K. Holmes Letter, DVI 1 st Quarterly Report – R5-2015-0705
Regulatory Program	Title 27
Unit	Compliance and Enforcement
Regulated Party (Discharger)	California Department of Corrections and Rehabilitation
Facility Name	Deuel Vocational Institute
County	San Joaquin

Pedro B. Reyes
California Department of Corrections & Rehabilitation
Departmental Construction & Maintenance Supervisor
Facilities Planning, Construction, and Management
Facilities Asset Management Branch
Phone: (916) 255-0516
Fax: (916) 255-3022

**DEUEL VOCATIONAL INSTITUTE
CLEAN UP AND ABATEMENT ORDER R5-2015-0704
OPERATION OF CLASS II SURFACE IMPOUNDMENT
QUARTERLY UPDATES FOR 2015**

WORK COMPLETED FROM JANUARY 1, 2015 THROUGH APRIL 30, 2015

- DVI started providing bottled water to staff and inmates on March 19, 2015. Process continues as long as the RO Plant is not operational
- Brine water delivery to East Bay Municipal Utility District (EBMUD) began on February 11, 2015
- February 13, 2015 – CDCR Facilities Planning, Construction and Management (FPCM) submits an Engineering Request to evaluate operation of the RO Plant
- February 27, 2015 – FPCM modifies Ford’s contract to include 50 Frac tanks for the storage of brine water
- Water Balance Report submitted on February 24, 2015
- FPCM contracted with Dewberry Consultants to perform assessment of RO Plant. Assessment began on March 10, 2015
- Ford delivered approximately 712,000 gallons of brine water to EBMUD
- April 8, 2015 – Three Raw Water pumps failed. Repairs were completed on April 20, 2015
- Contract to repair Well #5 has been expedited. Previous efforts to repair the well were not successful. Contractor was not able to obtain a Performance Bond. Office of Business Services is expediting the advertisement of a new contract
- April 23, 2015 – Reverse Osmosis Plant is operational
- April 25, 2015 – A purge hose failed. Plant is not operational. Hose repaired on April 27, 2015. Plant back on line on April 27, 2015
- April 27, 2015 – DVI declares emergency for the repairs of Well #9. CDCR Facilities Management starts process for well emergency repairs
- RO Plant operational for the remainder of April 2015

WORK TO BE CONDUCTED MAY 1, 2015 THROUGH JUNE 30, 2015

- Dewberry Consultant to complete assessment of RO Plant
- Ford Construction will complete delivery of RO brine water from the Frac tanks to EBMUD
- Ford Construction will remove sludge from Ponds 1, 2, 3, and #4
- DVI/FPCM will procure RO Spare Parts and store on site
- DVI/FPCM will develop specification for a RO Plant repair and maintenance contract
- DVI will continue with the process to refurbish Well #5
- FPCM will develop an emergency contract for the repair of Well #9
- Ford Construction will remove all Frac Tanks from DVI

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my knowledge and on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.



Pedro Reyes
DVI Regional Manager



Date

Reyes, Pedro@CDCR

From: Reyes, Pedro@CDCR
Sent: Friday, May 01, 2015 12:52 PM
To: CentralValleySacramento
Cc: Stanley, Jeff@CDCR (Jeff.Stanley@cdcr.ca.gov); Bettencourt, Miles (Terry)@CDCR; Vasconcellos, Edward@CDCR
Subject: CAB R5-2015-0704
Attachments: Spare Parts List Water Board Submittal.xlsx; DVI 156743 ZeeBlok Proposal Apr 21 2015.pdf; Update to Water Board (R5-2015-0707)(Orders #3 and #4).pdf

Tracking:	Recipient	Delivery	Read
	CentralValleySacramento		
	Stanley, Jeff@CDCR (Jeff.Stanley@cdcr.ca.gov)	Delivered: 5/1/2015 12:52 PM	
	Bettencourt, Miles (Terry)@CDCR	Delivered: 5/1/2015 12:52 PM	
	Vasconcellos, Edward@CDCR	Delivered: 5/1/2015 12:52 PM	Read: 5/1/2015 2:38 PM
	Madia, Teri@CDCR	Delivered: 5/1/2015 12:52 PM	Read: 5/1/2015 1:07 PM

Date of Title of Submittal	April 30, 2015 – Order R5-2015-0704
Regulatory Program	NPDES
Unit	Compliance and Enforcement
Regulated Party (Discharger)	California Department of Corrections and Rehabilitation
Facility Name	Deuel Vocational Institute
County	San Joaquin

Due to technical difficulties, a previous version of this e-mail submitted yesterday was never delivered.

Pedro B. Reyes
California Department of Corrections & Rehabilitation
Departmental Construction & Maintenance Supervisor
Facilities Planning, Construction, and Management
Facilities Asset Management Branch
Phone: (916) 255-0516
Fax: (916) 255-3022

Reyes, Pedro@CDCR

From: CentralValleySacramento <CentralValleySacramento@waterboards.ca.gov>
Sent: Friday, May 01, 2015 12:52 PM
To: Reyes, Pedro@CDCR
Subject: RE: CAB R5-2015-0704

Thank you for using the electronic mail box for the Central Valley Water Board's Sacramento office. This note is to acknowledge receipt of your email. Your email and any attached documents will be routed to the appropriate staff person and they will contact you if needed.

Reyes, Pedro@CDCR

From: CentralValleySacramento <CentralValleySacramento@waterboards.ca.gov>
To: Reyes, Pedro@CDCR
Sent: Friday, May 01, 2015 2:23 PM
Subject: Read: CAB R5-2015-0704

Your message

To:
Subject: CAB R5-2015-0704
Sent: Friday, May 01, 2015 2:23:11 PM (UTC-08:00) Pacific Time (US & Canada)

was read on Friday, May 01, 2015 2:23:08 PM (UTC-08:00) Pacific Time (US & Canada).

FACILITY PLANNING, CONSTRUCTION AND MANAGEMENT

P.O. Box 942883
Sacramento, CA 94283-0001



May 11, 2015

Kari Holmes, P.E.
11020 Sun Center Drive #200
Rancho Cordova, CA 95670

NOTICE OF VIOLATION OF CLEANUP AND ABATEMENT ORDER
R5-2015-0704, CALIFORNIA DEPARTMENT OF CORRECTIONS, DEUEL VOCATIONAL
INSTITUTION, SAN JOAQUIN COUNTY

Dear Ms. Holmes:

The California Department of Corrections and Rehabilitation, Facilities Planning, Construction and Management (FPCM) received your letter dated May 8, 2015, regarding the First Quarter 2015 Progress Report, the RO Plant Spare Parts Status Report, and the MBR Modules Replacement Time Schedule.

FPCM submitted all the aforementioned reports on May 1, 2015; however, due to technical and unforeseen circumstances, the 2015 first Quarterly Report was not attached to the e-mail. The missing report has been revised to include activities for Well #9 repairs and is attached to this email.

Also attached please find a copy of the submitted e-mail as well as copies of confirmations from the Central Valley Water Boards.

Should you require additional information, please contact me at (916) 255-0516, or via e-mail at pedro.reyes@cdcr.ca.gov.

A handwritten signature in blue ink, appearing to read "Pedro B. Reyes".

PEDRO B. REYES
Regional Manager
CDCR-FPCM

Attachments

cc: J. Price, Warden, Deuel Vocational Institution (DVI), CDCR
Edward Vasconcellos, Associate Warden, DVI, CDCR
Fred Cordano, Associate Director, FPCM, CDCR
Donald Struckman, Staff Counsel III, CDCR
Todd Poston, Project Director III, FPCM, CDCR
Jeff Stanley, Regional Manager, FPCM, CDCR
Terry Bettencourt, Correctional Plant Manager II, DVI, CDCR
Teri Madia, Senior Estimator of Building Construction, FPCM, CDCR
Vanessa Young, Staff Counsel, State Water Resources Control Board, Office of Enforcement

Farhad, Mohammad@Waterboards

From: Reyes, Pedro@CDCR
Sent: Friday, May 01, 2015 12:52 PM
To: CentralValleySacramento
Cc: Stanley, Jeff@CDCR; Bettencourt, Miles (Terry)@CDCR; Vasconcellos, Edward@CDCR
Subject: CAB R5-2015-0704
Attachments: Spare Parts List Water Board Submittal.xlsx; DVI 156743 ZeeBlok Proposal Apr 21 2015.pdf; Update to Water Board (R5-2015-0707)(Orders #3 and #4).pdf

Date of Title of Submittal	April 30, 2015 – Order R5-2015-0704
Regulatory Program	NPDES
Unit	Compliance and Enforcement
Regulated Party (Discharger)	California Department of Corrections and Rehabilitation
Facility Name	Deuel Vocational Institute
County	San Joaquin

Due to technical difficulties, a previous version of this e-mail submitted yesterday was never delivered.

Pedro B. Reyes
California Department of Corrections & Rehabilitation
Departmental Construction & Maintenance Supervisor
Facilities Planning, Construction, and Management
Facilities Asset Management Branch
Phone: (916) 255-0516
Fax: (916) 255-3022

Date of Title of Submittal	April 30, 2015 – Order R5-2015-0704
Regulatory Program	NPDES
Unit	Compliance and Enforcement
Regulated Party (Discharger)	California Department of Corrections and Rehabilitation
Facility Name	Deuel Vocational Institute
County	San Joaquin

ORDER #3

RO Plant Spare Parts

Funding to purchase \$250,000 of spare parts was submitted to our Budget Office on April 30, 2015.

DVI staff is currently obtaining bids to purchase the spare parts (attached spreadsheet). As soon as the budget is approved and bids are received, CDCR Facilities Management will initiate the purchase of the spare parts; however, the lead time for ordinary parts is minimum two weeks and up to 12 weeks for specialty parts. Once procured, the parts will be stored at the RO Plant and replenished as the parts are used. Dewbery Consulting is preparing documents needed to establish a schedule to prevent chronic toxicity whenever the RO Plant is not in operation. Schedule will be submitted upon development.

ORDER #4

MBR Replacement Schedule.

Funding to purchase the membrane has been requested. DVI staff is requesting quotes for the purchase of the membranes. As soon as the funding is provided and the quotes obtained, CDCR Facilities Management will purchase the membranes and installation will take place before the March 31, 2016 deadline. (Attached to this e-mail is the first quote obtained for the replacement of the membranes).

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my knowledge and on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. "



Pedro Reyes
California Department of Corrections & Rehabilitation
Regional Manager for Deuel Vocational Institute



GE
Water & Process Technologies

Proposal for

Deuel Vocational Institute Membrane Replacement Retrofit

ZeeBlok* Membrane & Services Supply

Submitted to:

California Department of Corrections and Rehabilitation, DVI

23500 Kasson Rd
Tracy, CA 95376

Attention:

Daniel G. Mullins
DVI Water & Wastewater Treatment Plant Supervisor
209-835-4141 x 5897

Danile.Mullins@cdcr.ca.gov

April 21, 2015

Proposal Number: 156743

ZENON Environmental Corporation
d/b/a GE Water & Process Technologies

Jason Diamond - Regional Lifecycle Manager
Tel: 905-399-7055

Email: jason.diamond@ge.com



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This proposal has been issued, based on the information provided by Buyer and currently available to GE at the time of proposal issuance. Any changes or discrepancies in site conditions, including but not limited to changes in system influent water characteristics, changes in Environmental Health and Safety conditions, changes in Buyer financial standing, changes in a water taking or disposal Permit reissued by the regulatory agency having jurisdiction, changes in Buyer requirements, or any other relevant change or discrepancy in the factual basis upon which this proposal was created may lead to changes in the offering, including but not limited to changes in scope of service, pricing, guarantees, quoted specifications, or terms and conditions.



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1 Introduction

GE Water & Process Technologies is pleased to present this proposal at the request of Deuel Vocational Institute (DVI) for wastewater membrane modules to populate the trains at the DVI WWTP. This proposal is for budgetary purposes only and does not constitute an offer of sale.

GE understands that the existing facility is not currently able to meet the required flow and a solution is needed to reduce transmembrane pressure and treat the full design capacity.

GE is a proven leader in delivering tangible value to our clients over the life of the plant. Our measure of success is how well we deliver **solutions** that help our clients meet their critical business objectives.

2 Basis of Design

The proposed ZeeBlok Membrane & Services for the DVI retrofit are offered based on the design parameters and assumptions summarized in the following sections. These values were taken in part from the GE Technical Submittal from the original project bid for DVI – New Wastewater Treatment Plant Project. The values below and any following assumptions require confirmation by DVI.

2.1 Influent Flow Data

The influent flow and design flows per train are summarized in the table below. Any flow conditions that exceed these flow limits must be equalized prior to treatment by the ZeeBlok Membranes.

Flow Condition	Flow	Units
ADF	1.40	MGD
MMF	1.50	MGD
MDF	1.80	MGD
PHF	2.70	MGD
Maximum Flow with one train offline for an extended period (less than 30 days)	1.4	MGD
Maximum Flow with one train offline for maintenance or cleaning (less than 5 days)	1.8	MGD

- Average Day Flow (ADF) – The average flow rate occurring over a 24-hour period based on annual flow rate data.
- Maximum Month Flow (MMF) – The average flow rate occurring over a 24-hour period during the 30-day period with the highest flow based on annual flow rate data.
- Maximum Day Flow (MDF) – The maximum flow rate averaged over a 24-hour period occurring within annual flow rate data.
- Peak Hour Flow (PHF) – The maximum flow rate sustained over a 1-hour period based on annual flow rate data.

2.2 Influent Quality

The design solution proposed is based on the mixed liquor characteristics entering the membrane tanks as detailed below.



Parameter	Design Value	Accepted Operating Range
Mixed liquor temperature (°C)	14	14 - 26
MLSS concentration in membrane tanks (mg/L) ¹	10,000	10,000 - 12,000
pH of mixed liquor in membrane tanks (SU)	7.0	6.5 - 7.5
Soluble cBOD ₅ concentration in mixed liquor entering membrane tanks (mg/L)	5	≤ 5
NH ₃ -N concentration in mixed liquor entering membrane tanks (mg/L)	0.5	≤ 1.0
Colloidal TOC (cTOC) concentration in mixed liquor entering membrane tanks (mg/L) ²	7	≤ 10
Soluble alkalinity of mixed liquor entering membrane tanks (mg/L as CaCO ₃)	100	50 - 150
Time to filter (TTF) of mixed liquor in membrane tanks ³	100	≤ 200
Material greater than 2-mm in size in mixed liquor in membrane tanks (mg/L) ⁴	0	≤ 1
Fats, Oil & Grease (FOG) (mg/L)	Refer to Note 6	

1. Membrane tank MLSS concentration of 12,000 mg/L is permissible during MDF and PHF events only. Membrane tank MLSS concentration to be 8,000 to 10,000 mg/L during all other flow conditions.
2. Colloidal TOC (cTOC) is the difference between the TOC measured in the filtrate passing through a 1.5 µm filter paper and the TOC measured in the ZeeBlok membrane permeate.
3. Per Seller's standard Time to Filter (TTF) procedure (available upon request).
4. Per Seller's standard Sieve Test procedure (available upon request).
5. Chemicals that are not compatible with the ZeeBlok PVDF membrane are not permitted in the membrane tank.
6. FOG concentration shall not exceed 150 mg/L of emulsified FOG in the feed with no free oil and less than 10 mg/L of mineral or non-biodegradable oil.

2.3 Effluent Quality

The following performance parameters are expected upon equipment startup based on the data listed in sections 2.1 and 2.2.

TSS	<5	mg/L	
Turbidity	<0.2	NTU	95% of the time
	<0.5	NTU	100% of the time

2.4 Influent Variability

Flows or loads in excess of the design criteria defined above must be equalized prior to the membranes. In the event that the influent exceeds the specifications used in engineering this proposal, or the source of influent changes, the ability of the membranes to produce the designed treated water quality and/or quantity may be impaired. Buyer may continue to operate the membranes, but assumes the risk of damage and/or additional costs due to increased membrane cleanings, potential for biological upset and/or increased consumable usage.

2.5 Membrane Configuration

GE's proposal is presented on the basis of installing membranes in all 4 (four) of the existing trains. Membrane trains are designed for installation within existing tanks supplied by Buyer. GE's proposed membrane configuration is outlined in the table below:



Configuration Data	Proposed Configuration After Upgrade
Number of Membrane Trains	4
Number of Cassettes Installed Per Train	6
Number of Cassette Spaces Per Train	7
Number of Modules Installed per Cassette	16
Number of Module Spaces per Cassette	16
Total Number of Installed Cassettes	24
Total Number of Installed Modules	384
Type of Membrane	ZeeBlok 500d
Module Surface Area, ft ²	300
Plant Surface Area, ft ²	115,200
Spare Space	14.3%

3 Scope – GE

3.1 Scope of Supply - base

Membranes & Cassettes	
ZeeBlok 500d 300 ft ² membrane modules individually bagged, boxed and crated ready for ocean shipment.	384
ZeeBlok 500d 16M cassettes including permeate and aeration manifolds	24
Hardware	
ZeeBlok Lifting Bracket	1
Permeate Connection Spools	24
Off-site Technical Services	
Project Management and Documentation	Included
Programming and Controls Adjustment, see below	10 hours
Pre-Engineering Site Visit (one trip)	
GE Representative (Project Manager)	1
Days on-site	1
On-site Technical Advisory Services for Module & Cassette Installation & Program Testing (one trip)	
GE Field Service Representatives	1
Days On-site	30
On-site Process Engineering Services during Program Testing (one trip)	
GE Process Engineer	1
Days On-site	2
Warranty	
2-year full replacement warranty on modules, see Section 8 for details.	Included
Services	
24/7 Telephone Support	1 year
Service Visit in first year of operation (3 days x 8 hrs/day)	1 visit
InSight Remote Monitoring & Diagnostic Service - Basic Level	1 year



3.2 Notes

Project Management & Documentation

Provide planning and off-site assistance during the membrane replacement project. Provide DVI with a package of membrane information, including cassette drawings and care of membrane instructions.

Controls

GE's design assumes the use of the existing PLC program with minor modification required for system parameters. An allowance of up to 10 hours for system controls programming review and minor parameter modifications has been included in GE's proposal. If the program requires additional in-house control modification, the time required will be estimated and invoiced separately.

GE estimates that 5 of the 30 days on-site will be allocated to testing the program changes implemented with this retrofit to ensure suitable operation.

Warranty

The ZeeBlok Membrane Modules are supplied with a base 2 year Full Replacement Seller's Warranty against manufacturing defects. For details of the warranty coverage on the membrane modules supplied, please see Section 8.

Onsite Technical Advisory Services

The proposal includes Technical Advisory Services during installation and program testing to DVI's staff per Section 3.1.

The following activities will be executed and completed jointly by GE personnel and plant staff:

- Remove existing membranes/cassettes;
- Install the new membrane modules/cassettes;
- Adjust PLC program set-points;
- Perform bubble test where applicable to test membrane integrity and review Trans Membrane Pressure (TMP) on the installed membranes and compare to expected values for new membranes.

Operating Responsibility - DVI retains control of the work site and retains final responsibility for the installation and program testing process.

GE will perform the services specified in the scope section of this document, but GE will not operate the system. For the purposes of this agreement, the term "operate the system" shall mean to run or control the functioning of the equipment or to otherwise conduct or manage the affairs of any aspect of water or wastewater treatment or other functions at DVI's site, and shall include functions such as providing operators or laborers to adjust or control water treatment ("WT") equipment, wastewater treatment ("WWT") equipment or sludge management facilities ("SWF"), providing program oversight or directing on-site or contract operators/laborers to adjust or control WWT or SMF, providing personnel responsible for or providing oversight of water treatment residual quality, wastewater effluent quality, sludge quality, waste characterization, or waste disposal activities, or providing personnel with continual or daily operational responsibilities with respect to water or wastewater treatment, influent or effluent compliance monitoring, process monitoring, government reporting or notification, or permit compliance.



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Waiting Time - Any overtime or waiting times required due to unforeseen site events outside the control of GE will be invoiced according to the prevailing GE Service Labor Rates Sheet, available on request.

GE Duties for On Site Services

- GE will coordinate its work under this agreement in a reasonable manner with the operating staff of the facility.
- GE will maintain public liability and property damage insurance covering all operations undertaken by GE and its sub-contractors with a minimum limit of \$5,000,000 inclusive for any one accident or occurrence. If for any reason additional insurance coverage (e.g. General Construction/Erection All Risk, General Liability) is required above and beyond GE's standard insurance terms for onsite services, DVI must inform GE in writing 60 days prior to work commencement at site. DVI will be billed for all additional insurance costs and processing fees.
- GE will maintain Workers Compensation and Employers' Liability coverage as per statutory requirements.

4 Commercial Terms

4.1 Price

Pricing for the proposed Equipment and Services is summarized in the table below. All pricing is based on the operating conditions and influent analysis that are described in this proposal.

Budgetary Price: Base Equipment & Service	
ZeeBlok 500d MBR Membranes and Associated Services, as described in Section 3.1.	\$ 860,000 USD

Please note that the presented pricing does not include any provision for any procurement restrictions imposed on Seller by Buyer's funding parties. Should these restrictions be required, such as "Buy America", Seller reserves the right to adjust the pricing herein upon review of the restrictions.

4.2 Taxes

Pricing provided herein does not include any taxes or duties.

Buyer shall be directly responsible, and reimburse Seller, for the gross amount of any present or future sales, use, excise, value-added, environmental, or other similar tax or duty applicable to the price, sale or delivery of any Equipment or Services furnished under this proposal. Unless Buyer has furnished Seller with evidence of tax exemption or direct pay permit acceptable to taxing authorities prior to the execution of any Purchase Order / Agreement or Seller's acceptance of Buyer's Purchase Order (as applicable), Buyer shall pay all taxes as invoiced by Seller and Seller is relieved of any obligation to (i) apply any tax exemption or direct pay permit, and/or (ii) refund the Buyer any tax paid by the Seller.

Seller's price and schedule shall be based on applicable Federal and State laws, local ordinances, codes, and standards as well as duties, sales or use taxes in effect as of the date of Seller's proposal. Should such laws, codes, taxes and standards change and increase the cost of



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performing the work or impact the schedule, Seller shall, upon notice to Buyer of such, be entitled to an equitable adjustment of price and /or schedule. Similarly, should such laws, codes, taxes and standards change and decrease the cost of performing the work, Buyer shall be entitled to an equitable adjustment of price.

4.3 Flight Booking

Prices quoted for installation which include airfare are either based on timely confirmation of a visit schedule or based on receipt of a Purchase Order in time to book any flights seven days in advance. Additional airfare charges related to late arrival of a Purchase Order will be extra and billed through to DVI without mark-up.

4.4 Delivery

- ❑ **DDP** - Delivery will be by standard ocean/ground on the basis of DDP DVI WWTP, Tracy, CA, 95376, USA or other named place of destination; Incoterms 2010. DDP = Delivery Duty Paid. Partial shipments will be acceptable unless otherwise specified. Where delivery cannot be accepted at this destination, DVI shall specify an alternate, equivalent destination without delay.

Due to varying origins and availability, non-membrane items included in this proposal may ship separate from the membranes. Should separate shipments be required, where possible, GE will strive to provide these items on or before the delivery of the membranes.

- ❑ **Origin** - Delivery of ZeeBlok membranes originates from the GE Water & Process Technologies, ZENON Membrane Products (ZEM), Bláthy Ottó u 4, Oroszlány, 2840 Hungary facility.
- ❑ **Title & Risk** - Title and risk of loss or damage to membrane modules, cassette frames and crating shall pass to DVI upon delivery at the named place of destination.
- ❑ **Export Documents** - All ZeeBlok membrane module shipments into the USA require clearance documentation from the EPA. GE will prepare and provide the required EPA documentation to the Carrier.
- ❑ **MPF** - Merchandise Processing Fee is a fee assessed for formal custom entries based on 0.35% of the invoice value, with a minimum of USD \$25 per formal entry and a maximum of USD \$485.
- ❑ **Taxes and Duty** - A US Customs duty of 3.9% applies to all ZeeBlok membranes shipped individually; not in cassette frames. Any new duty imposed after the date of this proposal is the responsibility of DVI. All applicable Local, State, or Federal taxes are the responsibility of DVI.
- ❑ **Temperature** - UF membranes cannot be allowed to freeze or overheat and may require temperature-controlled freight and handling according to the season and the planned routing.
- ❑ **Availability** - Delivery of membrane modules is typically 20 weeks after receipt of order. Definitive Membrane Module availability will not be confirmed until a Purchase Order is received from DVI and acknowledgement of a Purchase Order is issued by GE.



4.5 Bonds

Bonds are not included in the price. These bonds can be purchased on request but will be at additional cost.

4.6 Payment Terms

The pricing quoted in this proposal is based upon the following payment terms, subject to approval of Buyer credit (all payments are net 30 days):

- 30% with acceptance of Purchase Order. Shipment of membranes is contingent on receipt of initial milestone payment;
- 60% with membrane module shipping documents supplied to Carrier;
- 10% on Completion of Program Testing, or Net 60 days from equipment shipment, whichever occurs first.

No financial allowance has been made for any Holdbacks on submitted invoices.

4.7 Proposed Project Schedule

The equipment delivery date, installation date, and date of program testing are to be negotiated.

4.8 Royalty and License Fees

Application Patents

Seller has a number of patents covering the products, equipment and applications offered in this proposal.

Non-Exclusive Royalty Free License

Seller grants Buyer a non-exclusive, non-terminable, royalty free license to use the intellectual property embedded in the Equipment delivered to and paid for by the Buyer, as well as any drawings, design or data delivered to and paid for by the Buyer, for the purposes of owning, financing, using, operating, and maintaining the relevant Equipment at Buyer's site. Such license may only be assigned to a subsequent owner of the Equipment or to an operations & maintenance sub-contractor. Such license does not extend to the re-creation of the Equipment or the manufacture of spares or consumables by Buyer or third parties.

Any software Seller owns and provides pursuant to this proposal shall remain Seller's property. Seller provides to Buyer a limited, non-exclusive and terminable royalty free project-specific license to such software for the use, operation or maintenance at Buyer's site of any Equipment purchased hereunder to which software is a necessary component. Buyer agrees not to copy, sub-license, translate, transfer or reverse engineer, or decode the software. Single user versions of software may be used on one CPU. LAN/WAN versions may be used on a single server with only the number of concurrent users as agreed to by the Parties. Unless otherwise expressly agreed by Seller, this license shall terminate and the software shall be returned to Seller as soon as the Buyer no longer operates the Equipment as sold, or upon the material breach of these terms.

Furthermore, the chemistries used in the manufacture of Seller's ultrafiltration and microfiltration membranes sold under the ZeeBlok brands are proprietary and the Buyer undertakes not to analyze these membranes or to permit analysis of these membranes by a third party.



4.9 Terms and Conditions

By accepting our proposal, the Buyer agrees to include Seller's proposal as a contract document in any Purchase Order or Procurement Agreement.

This proposal has been prepared and is submitted based on Seller's General Terms and Conditions of Sale, found in Section 8.

It should be noted that once the Buyer's Terms and Conditions are received, the final Terms and Conditions can be negotiated to the mutual agreement of Seller and the Buyer. Buyer's Terms & Conditions may typically include specific bonding requirements, liquidated damages, cancellation clauses, equipment warranty requirements and other contractual liabilities for which Seller has made no provision in the pricing provided herein. Seller therefore reserves the right to adjust the pricing herein upon review of any Buyer supplied Terms and Conditions.

4.10 Conditional Offering

Buyer understands that this proposal has been issued based upon the information provided by Buyer, and currently available to Seller, at the time of proposal issuance. Any changes or discrepancies in site conditions (including but not limited to system influent characteristics, changes in Environmental Health and Safety ("EH&S") conditions, and/or newly discovered EH&S concerns, Buyer's financial standing, Buyer's requirements, or any other relevant change, or discrepancy in, the factual basis upon which this proposal was created, may lead to changes in the offering, including but not limited to changes in pricing, warranties, quoted specifications, or terms and conditions. Seller's offering in this proposal is conditioned upon a full Seller EH&S, and Buyer financial review.

5 Scope - DVI

The following items are for design, supply and installation by OTHERS and will include but are not limited to:

Mechanical

- Overall plant design.
- Review and approval of design parameters related to the membrane separation system.
- Headworks and Pretreatment equipment and facilities including but not limited to Fats, Oils and Grease Removal, Trash trap, Grit Removal, Coarse Screening and their associated equipment and instrumentation.
- Equalization tank facilities and systems including associated equipment and instrumentation.
- Influent flow measurement to the membrane filtration system (4-20 mA signal to be sent to PLC).
- Biological equipment including but not limited to: blowers, diffusers, mixers, raw sewage feed pumps, mixed liquor transfer pumps, waste/drain pumps and associated instrumentation and valves.
- Membrane process equipment including but not limited to: blowers, permeate and backpulse pumps, waste/drain pumps and associated instrumentation and valves.



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- ❑ Finished water disinfection, storage, and pumping equipment and associated instrumentation.
- ❑ Design, supply and installation of anchor bolts, brackets and fasteners.
- ❑ Unless otherwise stated, design, supply and installation of influent fine screening and facilities for collection and disposal of fine screenings including pressured water source for fine screen.
- ❑ Design, supply and installation of air and sample line tubing, fittings, isolation valves & mountings to instruments and valves.
- ❑ Design, supply and installation of bulk chemical storage facilities, transfer pumps and associated controls.
- ❑ Any spacer rings that may be required for valves.
- ❑ Energy/power and chemical usage measurement and equipment for Performance Testing.
- ❑ All required permits and permissions including but not limited to: Civil Works, Mechanical and Electrical Works, Environmental Permits or Other Permits to allow operation.
- ❑ Weather protection, including heat tracing, insulation, sunshades, etc., of equipment and instrumentation.
- ❑ Necessary equipment for cassette access and removal.
- ❑ Painting of all outdoor PVC piping for UV protection.
- ❑ Cassette Inspection Rack used to hold a cassette after removal from a tank.

Electrical

- ❑ Supply and installation of panel boards, transformers, and other equipment as necessary to provide power distribution and control for all membrane system equipment.
- ❑ Design, supply and installation of Motor Control Centers complete with motor starters and variable frequency drives.
- ❑ Design, supply and integration of plant SCADA, including SCADA configuration, testing and interfacing with the membrane control system.
- ❑ Design, supply and installation of all power distribution and instrumentation interconnecting wiring, optical fibers, conduit and appurtenances.
- ❑ Control of equipment and systems.
- ❑ Provide GE with original plant PLC with comments.

Installation Preparation

- ❑ Confirmation of proper equipment installation and operation for equipment on-site.
- ❑ Supply and installation of all required oil and lubricants for equipment start-up and initial operation per the manufacturer's specifications.
- ❑ Replacement of lubricants in all drives and intermediate drives of mechanical equipment after initial break-in of the equipment.



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- ❑ Flushing of all piping and membrane tanks and verification of removal of all residual debris from construction.
- ❑ Receive, off-load, handle and provide temperature controlled storage of the equipment and materials required for Seller to perform the duties outlined in the Seller's Scope of Supply.
- ❑ Storage of membrane cassettes on site. Cassettes must be stored in a sheltered area, protected from freezing, direct sunlight or extreme heat, and sealed as shipped until ready for use. Storage should be in a dark, dry, level, area, out of direct sunlight and at a temperature of 5-30°C (39-86°F). In extreme cases membranes can be stored at 30-35°C (86-95°F) for a maximum of 4-6 weeks. Contact GE if storage at these temperatures is required. It is recommended that the cassettes not be stored longer than necessary prior to installation. Coordinate with GE for appropriate shipment times. Maximum storage duration of a cassette is eight months from the date of shipment.
- ❑ Installation & removal of suitable temporary screens on all process lines entering the membrane basins to prevent foreign construction related debris from coming in contact with the membranes. Debris found within the tank can potentially void membrane warranties or require immediate replacement of damaged cassettes.
- ❑ Provide assistance where necessary to electrical trades in the accomplishment of functions requiring mechanical tradesmen (including pipe fitters and any other trades within the scope of this contract).
- ❑ All required permits and approvals to run the plant.
- ❑ Temporary piping/hosing may be required for the commissioning of the plant before effluent distribution is authorized.

Installation & Commissioning

- ❑ Provide at least 2 plant personnel to work continuously with the GE Service Representative during installation of the modules and program testing for the full duration of the site visit.
- ❑ Verification of programming and correct operation of the plant.
- ❑ Laboratory services, operating and maintenance personnel during equipment checkout, start-up and operation.
- ❑ DVI will afford Seller's personnel free access and egress of the facility for all authorized work. DVI will provide reasonable access to workshop facilities with standard workshop tools and equipment as is necessary to meet any repair and maintenance requirements of the system during installation.
- ❑ Provide adequate illumination and emergency lighting for all areas in which the Seller will be executing the scope of supply. Provide all site utilities such as raw water, instrument quality air, potable water and power required for operation of the proposed equipment included in this scope of supply. Assure that adequate quantities of membrane cleaning and neutralizing chemicals are on hand for wash procedures including sodium hypochlorite, sodium bisulphite, citric acid and sodium hydroxide. Supply telephone/fax/modem access while Seller's staff members are on-site.
- ❑ Provide assistance to assemble new modules into cassettes.
- ❑ Provide assistance to place the new cassettes into the system.



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- ❑ Raw materials, chemicals, seeding sludge and utilities during equipment start-up and operation including a supply of raw water feed that meets all design parameters for the successful commissioning of the membrane equipment.
- ❑ Dispose of shipping and packaging materials unless specifically requested not to do so by GE.
- ❑ At the end of the site visit, prior to departure of the GE Service Representative, DVI will sign a Work Order that describes the hours on site and the Technical Advisory Services provided.
- ❑ Completed Contractor checklists prior to module installation and program testing.

Civil

- ❑ Provision of main plant structures, existing tank modifications, buildings, equipment foundation pads, concrete work, etc.
- ❑ Tank and equipment access platforms, walkways, stairs, safety tie off points, handrails, grating, ladders, etc.
- ❑ Isolation gates between membrane tanks and mixed liquor channel and/between membrane tanks and common channel
- ❑ Covers, grating, and their support over membrane tanks and bioreactor.
- ❑ Membrane tank influent deflector plates (if applicable).
- ❑ Any on-site touch-up primer or painting of equipment.
- ❑ Venting of any chemical tanks.
- ❑ Overhead traveling beam crane or monorail(s) & pulley/hoist above the membrane tanks for installation and removal of the membrane cassettes.

The maximum lifting weight for a ZeeBlok 500d 16M cassette is estimated at 3,600 lb.

The maximum lifting height for a ZeeBlok 500d cassette is 90 in.

Recommended minimum rating of cassette lifting equipment is 2 ton.

DVI must confirm that the capacity of the on-site lifting module will allow lifting of the GE cassettes. DVI is also responsible to confirm that crane lifting heights are adequate in all areas of the plant to accommodate this proposed change.

- ❑ All lifting equipment and accessories including but not limited to davits, hoists, traveling beam crane or monorail(s) & pulley/hoist, etc.
- ❑ Collection and disposal for membrane rinse and flush waters. The glycerin water solution used as preservative in the membranes typically exhibits COD levels reaching 30,000 mg/L BOD. Typical volumes expected are three (3) to four (4) full membrane tanks per train. For wastewater systems, the biological system can consume the glycerin after seeding with sludge and when aeration begins. Special disposal is not required.

Piping Interfaces

- ❑ Design, supply and installation of process and utilities piping, pipe supports, hangers, valves, etc.

6 Solution Design Notes

6.1 Permits

Regulatory Requirements

DVI is responsible to review and report to the permit granting agency on the impact of any of the proposed changes on the regulatory permit. GE will provide the necessary manufacturer's technical support on regulatory issues.

6.2 Maintenance Notes for Replacement Membranes

Membrane Slack

GE's membranes are supplied and shipped with an initial factory fiber slack designed to optimize membrane air scouring during operation as well as accommodate a degree of shrinkage. Membranes shrink in length early in their lifecycle when exposed to higher temperature water. The pace of shrinkage slows with age. With the installation of new membranes, the requirements for slack adjustment start a new cycle.

Due to the wide variety of operating environments in which our products can be utilized, it is difficult to generally predict the rate of shrinkage. If membranes operate in a condition of insufficient slack for an extended period of time, irreversible damage to the fiber-urethane bond may occur. Please refer below to the recommended inspection frequencies based on your plant's membrane tank operating temperature. Visual inspections should begin during the membrane installation and be repeated over time on the same cassette. Digital pictures will allow for comparative analysis of the fiber slack over time.

Maximum Operating Temperature	Recommended Slack Inspection Frequency
0-24 °C / 32-76 °F	Every 2 years
25-30 °C / 77-86 °F	Once Per Year
>30 °C / > 86 °F	Twice Per Year

Bubble Test Pressure

The bubble test pressure for the purchased membranes is 2 psi horizontally and 3 psi vertically.

Hoses & Fittings

Based on discussions with DVI, GE has included permeate connection spools for each cassette in this proposal. GE has assumed that the existing aeration cassette connections can be used for the new ZeeBlok cassettes and do not need replacing at this time. This will be confirmed during GE's pre-engineering site visit. If the existing connections are not suitable, GE will add them to this proposal.

Blowers

Any resheaving parts as well as mechanical and electrical adjustments required to meet new air flow will be completed by DVI or their 3rd party designate. GE will assist DVI in determining correct air flow requirements for the new plant configuration.

Pre-Screen

Trash and non-biodegradable solids, such as hair, lint, grit and plastics may foul or damage the membranes if allowed to pass into the membrane chamber. GE recommends that an internally-



fed screen with mesh or punched-hole openings less than or equal to 2 mm with no possibility of bypass or carryover be operated upstream of the new membranes to ensure effective operation and to maximize membrane life.

Documentation

GE will provide documentation specific to the ZeeBlok cassettes as described in Section 3.2. GE's proposal assumes the availability of as-built membrane tank general arrangement drawings to use as a basis for GE's drawing package. Documentation (O&M manual, drawings, control logic, etc) provided with the original plant will be used with GE's ZeeBlok solution. Requested updates to these documents will be charged separately.

7 Health & Safety

DVI

- DVI will identify and inform Seller's personnel of any site specific hazards present in the work place that could impact the delivery of Seller's scope of supply and agrees to work with Seller to remove, monitor, and control the hazards to a practical level.
- DVI will provide training to Seller's personnel on all site specific and standard company operating procedures and practices for performing work on site. Such training programs may include, but are not limited to, general Environmental Health & Safety (EHS), HAZOP, fire protection, drug testing, incident notice, site conduct, standard first aid, chemical receiving, electrical safety, etc. DVI will provide a certificate of training for Seller's personnel. This program will be fully documented, training materials will be provided, and attendance list will be kept.
- If any type of lifting devices will be used on site, DVI will provide proof of its maintenance, inspection and certification documentation upon request and will assist the GE Service Representative to complete a safety inspection checklist.
- Where confined space entry may be required, DVI will provide early notice and will collaborate with GE in planning adequate staffing and in advising the local fire/rescue department as required.
- No time or cost provision has been made for preparations such as safety record clearances, drug testing, insurance confirmations or pre-job-training in excess of 1 hour. Prior to finalizing the Purchase Order and the work schedule, DVI will advise GE of any pre-job or pre-mobilization requirements. Where these requirements exceed 1 hour, this time will be charged to DVI at rates set out in the prevailing GE Labor Rate Sheet.
- Where certain short duration activities require two people for safety and the GE Service representative is alone at site, DVI will cooperate as required to assure that correct safety precautions are taken.
- DVI is responsible for the following safety and environmental provisions:
 - First aid and emergency medical response;
 - Eyewash and safety showers in the water treatment area;
 - Chemical spill response;



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- Security and fire protection systems per local codes;
- Environmental use and discharge permits for all chemicals at DVI's facility either listed in this document or proposed for use at a later date;
- Any special permits required for Seller's or DVI's employees to perform work related to the water treatment system at the facility;
- All site testing, including soil, ground and surface water, air emissions, etc.;
- Disposal of all solid and liquid waste from the Seller's System including waste materials generated during construction, start up and operation.

GE

- All work on site will be performed in accordance with applicable law and will be performed reasonably, in a clean and safe manner. The GE Service Representative will abide by the more stringent of the applicable health, safety and environmental policies and procedures of either DVI or GE.
- GE will provide all applicable safety training required by GE policies or by state or national health and safety regulations. The GE Service Representative will have undergone Workplace Hazardous Material Information System (WHMIS) training and will come equipped with necessary Personal Protective Equipment (PPE).
- Emergencies - In emergencies affecting the safety of persons, work or property at the site and adjacent thereto, GE will act, without previous instructions from DVI, as the situation warrants. GE will notify DVI immediately thereafter.



8 Terms and Conditions of Sale

A - Specific Terms and Conditions of Sale

1 Legal Entity for Contracting

ZENON Environmental Corporation is the name of the legal entity providing services and is an affiliate of GE Water & Process Technologies. Purchase Orders and Checks should be made out using the name ZENON Environmental Corporation.

Please advise us if this GE entity is not set up in your purchasing system as a vendor and you do have another GE entity set up. We are keen to make the purchase process as convenient as possible for DVI.

Short Form: Where a short reference is required in this document, for convenience, we are called simply **GE**.

2 Payment Terms

On approved credit, payment terms are Net 30 Days from customer receipt of invoice.

3 Proposal Validity

Prices quoted and proposal terms are valid up to thirty (30) days after the date of issue of this proposal unless confirmed with a Purchase Order.

4 Inflation Adjustment

All prices quoted are stated in US dollars and will be adjusted for inflation from the proposal validity date according to at least the percentage change +1% in the Consumer Price Index US City Average, All Urban Customers, All Items as published by the US Department of Labor Bureau of Labor Statistics at www.bls.gov/cpi.

5 Bonds

Performance or Payment Bonds are not included in the price. These bonds can be purchased on request but will be at an additional cost.

6 Flight Booking

Prices quoted for installation which include airfare are either based on timely confirmation of a visit schedule or based on receipt of a Purchase Order in time to book any flights seven days in advance. Additional airfare charges related to late arrival of a Purchase Order will be extra and billed through to DVI without mark-up.

7 Purchase Order Guidelines

Please ensure that your Purchase Order has covered the following points. This will ensure accurate and prompt order entry, product delivery, invoicing and accounts receivables processing and will prevent administrative delays for all parties.

- Legal Entity** - Please be sure your Purchase Order is issued in the name of the specific GE legal entity issuing this proposal cited above. We will be glad to work with your Purchasing department to set this entity up as an approved Supplier/Vendor. Please advise us if this GE entity is not set up in your purchasing system as a vendor and you do have another GE entity set up.
- Hard Copy** - Our strong preference is to receive a hard copy of your Purchase Order rather than a PO number alone.
- Proposal Number and Date** - Please reference the 6 digit Proposal Number and the Proposal Date which are found in the footer of each page.
- Price** - State the total price you are accepting for this order.
- Taxes** - Provide any required tax exemption certificates.
- Ship-To Address** - Please clearly define the plant site address or delivery location and the Receiver's email & telephone. Please specify receiving hours and any special off-loading requirements.
- Delivery Date** - Please include your requested delivery date or agreement start date.
- Purchase Order** - Please send your Purchase Order to GE by email to ServicePOCentral@ge.com

B – General Terms and Conditions of Sale

Note to Purchasing Agent: The following are GE's standard set of commercial terms & conditions, written for moderate value transactions to allow an efficient and rapid provision of services and parts. Where Master Corporate Agreement Terms or previously negotiated Terms have been agreed with GE these may be brought forward by either party and applied by mutual consent. If any of these Terms sets are not immediately acceptable to DVI, please anticipate a typical 6-10 week cycle of mutual review to build agreement on changes.

- 1. Exclusive Terms and Conditions.** Together with any other terms the Parties agree to in writing, these General Terms and Conditions – together with the last proposal in order of time issued by the Seller – form the exclusive terms (“Agreement”) whereby Buyer agrees to purchase, and Seller agrees to sell products and equipment (jointly “Equipment”) and to provide advice, instruction and other services in connection with the sale of that Equipment (“Services”). If Buyer sends to Seller other terms and conditions to which Seller may not respond, including but not limited to those contained in Buyer’s purchase order, such shall not apply. This Agreement may only be revised by a change order approved in writing by both Parties. All terms not defined herein shall be defined in Seller’s proposal.
- 2. Equipment and Services.** The Equipment to be delivered and the Services to be provided shall be as set out in this Agreement. Unloading, handling, storage, installation, and operation of Buyer’s systems or the Equipment are the responsibility of Buyer. Buyer shall not require or permit Seller’s personnel to operate Buyer’s systems or the Equipment at Buyer’s site.
- 3. Prices and Payment.** Buyer shall pay Seller for the Equipment and Services in accordance with the payment schedule (as set forth in Seller’s proposal or, if applicable, in any special conditions agreed to in writing by the Parties). Unless otherwise specified in writing, payment is due net thirty (30) days from the date of Seller’s invoice. Seller may require a Letter of Credit or other payment guarantee, in which case the stated amount of the guarantee will be adjusted by Buyer in the event of any currency-based adjustment to prices or payment amounts per the Payment Schedule, and Buyer shall deliver the adjusted guarantee within five (5) days of request by Seller. Buyer agrees to reimburse Seller for collection costs, including 2% (two percent) interest per month (not to exceed the maximum amount permitted by applicable law), should Buyer fail to timely pay. Buyer shall have no rights to make any deduction, retention, withholding or setoff relating to any payments due under this Agreement.
- 4. Taxes and Duties.** Seller shall be responsible for all corporate taxes measured by net income due to performance of or payment for work under this Agreement (“Seller Taxes”). Buyer shall be responsible for all taxes, duties, fees, or other charges of any nature (including, but not limited to, consumption, gross receipts, import, property, sales, stamp, turnover, use, or value-added taxes, and all items of withholding, deficiency, penalty, addition to tax, interest, or assessment related thereto, imposed by any governmental authority on Buyer or Seller or its subcontractors) in relation to the Agreement or the performance of or payment for work under the Agreement other than Seller Taxes (“Buyer Taxes”). The Agreement prices do not include the amount of any Buyer Taxes. If Buyer deducts or withholds Buyer Taxes, Buyer shall pay additional amounts so that Seller receives the full Agreement price without reduction for Buyer Taxes. Buyer shall provide to Seller, within one month of payment, official receipts from the applicable governmental authority for deducted or withheld taxes. Buyer shall furnish Seller with evidence of tax exemption acceptable to taxing authorities if applicable, prior to execution of the Agreement by both Parties or issuance by the Seller of the order acceptance. Buyer’s failure to provide evidence of exemption at time of order will relieve Seller of any obligation to refund taxes paid by Seller.
- 5. Delivery, Title, Risk of Loss.** Unless otherwise specified in this Agreement, Seller shall deliver all Equipment to Buyer FCA (Incoterms 2010) Seller’s facility. The time for delivery of the Equipment to Buyer shall be specified in this Agreement. Seller’s sole liability for any delay in delivery of the Equipment shall be as expressly set out in this Agreement. The place of delivery specified herein shall be firm and fixed, provided that Buyer may notify Seller no later than forty-five (45) days prior to the scheduled shipment date of the Equipment of an alternate point of delivery, Buyer shall compensate Seller for any additional cost in implementing the change. If any part of the Equipment cannot be delivered when ready due to any cause not attributable to Seller, Buyer shall designate a climate-controlled storage location, and Seller shall ship such Equipment to storage. Title and risk of loss shall thereupon pass to Buyer, and amounts payable to Seller upon delivery or shipment shall be paid by Buyer along with expenses incurred by Seller. Services provided herein shall be charged at the rate prevailing at the time of actual use and Buyer shall pay any increase, and Buyer shall pay directly all costs for storage and subsequent transportation. Failure by Buyer to take delivery of the Equipment shall be a material breach of this Agreement.

Title and risk of loss to the Equipment shall be transferred from Seller to Buyer at the point of delivery upon handover in accordance with this Agreement. Title and risk of loss to the Services shall pass as they are performed.



6. **Warranties and Remedies.** Seller warrants that Equipment shall be delivered free from defects in material, workmanship and title and that Services shall be performed in a competent, diligent manner in accordance with any mutually agreed specifications. Seller's warranty does not cover the results of improper handling, storage, installation, commissioning, operation or maintenance of the Equipment by Buyer or third parties, repairs or alterations made by Buyer without Seller's written consent, influent water which does not comply with agreed parameters, or fair wear and tear.

Unless otherwise expressly provided in this Agreement, the foregoing warranties are valid for:

- a. chemicals and Services, for six (6) months from their date of delivery or the provision of Services;
- b. consumables, including filters and membranes (other than membranes for process treatment), twelve (12) months from their date of delivery;
- c. membranes for process treatment, ninety (90) days from their date of delivery;
- d. Equipment other than chemicals and consumables, the earlier of, fifteen (15) months from delivery or shipment to storage, or twelve (12) months from start-up/first use;
- e. software, ninety (90) days from the date of receipt;
- f. Equipment not manufactured by Seller, the warranty shall be the manufacturer's transferable warranty only,

Any claim for breach of these warranties must be promptly notified in writing, and Buyer shall make the defective item available to the Seller, or the claim will be void. Seller's sole responsibility and Buyer's exclusive remedy arising out of or relating to the Equipment or Services or any breach of these warranties is limited to repair at Seller's facility or (at Seller's option) replace at Seller's facility the defective item of Equipment, and re-perform defective Services. In performance of its obligations hereunder, Seller will not control the actual operation of either Buyer's systems or the Equipment at the Buyer's site.

Warranty repair, replacement or re-performance by Seller shall not extend or renew the applicable warranty period.

The warranties and remedies are conditioned upon (a) proper unloading, handling, storage, installation, use, operation, and maintenance of the Equipment and Buyer's facility and all related system in accordance with Seller's instructions and, in the absence, generally accepted industry practice, (b) Buyer keeping accurate and complete records of operation and maintenance during the warranty period and providing Seller access to those records, and (c) modification or repair of Equipment or Services only as authorized by Seller in writing. Failure to meet any such conditions renders the warranty null and void.

The Buyer will be entitled to assign to a subsequent owner of the Equipment the warranties of the Seller under this Agreement, provided that a prior written notification is sent to the Seller and the assignment agreement contains terms and conditions which provide the Seller with the protections of the warranties and limitations on liability contained in the Agreement. Subject to Buyer's compliance with the foregoing requirement, such warranty rights are expressly assignable by the Buyer to a subsequent owner of the Equipment. Except as provided herein, Buyer is not entitled to extend or transfer this warranty to any other party. The warranties and remedies set forth in this article are in lieu of and exclude all other warranties and remedies, statutory, express or implied, including any warranty of merchantability or of fitness for a particular purpose.

Unless otherwise expressly stipulated in this Agreement, Seller gives no warranty or guarantee as to process results or performance of the Equipment, including but not limited to product quality, flow, production, capacity, membrane life, chemical consumption, regulatory compliance or energy consumption.

7. **General Indemnity.** Seller shall indemnify and hold harmless Buyer from claims for physical damage to third party property or injury to persons, including death, to the extent caused by the negligence of Seller or its officers, agents, employees, and/or assigns while engaged in activities under this Agreement. Buyer shall likewise indemnify and hold harmless Seller from claims for physical damage to third party property or injury to persons, including death, to the extent caused by the negligence of the Buyer, its officers, agents, employees, and/or assigns. In the event such damage or injury is caused by the joint or concurrent negligence of Seller and Buyer, the loss shall be borne by each Party in proportion to its negligence. For the purposes of this article (i) "Third party" shall not include Buyer or any subsequent owner of the Equipment, their subsidiaries, parents, affiliates, agents, successors or assigns including any operation or maintenance contractor, or their insurer; and (ii) no portion of the Equipment is "third party property".



8. **Compliance with Laws and Permits.** All permits, authorizations, and licenses which are required to construct, install and/or operate Buyer's facility or equipment, to use the Equipment, or to manage and dispose of any wastes, discharges, and residues resulting from Buyer's use of the Equipment, shall be obtained and maintained by Buyer at Buyer's sole expense. Buyer is responsible for compliance with all laws and regulations applicable to the storage, use, handling, installation, maintenance, removal, registration, and labeling of all Equipment after delivery of the Equipment, as well as for the proper management and disposal of all wastes, discharges, and residues.
9. **Buyer's Site Conditions.** Buyer warrants that any data furnished to the Seller concerning conditions at Buyer's site (including but not limited to any existing Buyer facility, equipment or processes, influent water or other substances to be treated or measured with the Equipment) is accurate and complete, and the Seller reserves the right to utilize the most appropriate design compatible with generally accepted engineering practices, and to make changes in details of design, manufacture and arrangement of Equipment unless precluded by any limitations specified in this Agreement. Seller shall notify Buyer of (1) any conditions at Buyer's site which materially differ from those indicated in the data furnished by Buyer, (2) any previously unknown physical conditions at Buyer's site of an unusual nature, not revealed by previous investigations and differing from those ordinarily encountered in the type of work provided for in this Agreement, and (3) the presence of any Hazardous Materials (as defined below), the existence of a contaminated soil, unexploded ordinance, or archaeological remains. If such conditions cause an increase in Seller's cost or in the time required for the performance of Seller's obligations, Seller shall be entitled to an equitable adjustment in the Agreement price and an extension in the time for performance.
10. **Hazardous Materials and Wastes.** In the event that Seller encounters any Hazardous Materials (meaning toxic substances, hazardous substances, pollutants, contaminants, regulated wastes, or hazardous wastes as such terms may be defined or classified in any law, statute, directive, ordinance or regulations promulgated by any applicable governmental entity) at Buyer's site, other than Hazardous Materials introduced by Seller or that are otherwise the express responsibility of Seller under this Agreement, Buyer shall immediately take whatever precautions are required to legally eliminate such Hazardous Materials so that the Seller's work under this Agreement may safely proceed. At no time shall Seller be deemed to have taken title to or the responsibility for the management or disposal of any wastes, Hazardous Materials, influent water, any resultant product streams, wastewater streams, discharges, cleaning materials, or any other materials or substances processed by the Equipment or otherwise located at Buyer's site. Seller does not take responsibility for and hereby expressly disclaims responsibility for the characterization or disposal of wastes, Hazardous Materials, or for the identification, selection, or management of disposal facilities for any wastes.
11. **Excusable Delays.** Seller shall not be liable nor in breach or default of its obligations under this Agreement to the extent performance of such obligations is delayed or prevented, directly or indirectly, due to causes beyond the reasonable control of Seller, including, but not limited to: acts of God, natural disasters, unusually severe weather, fire, terrorism, war (declared or undeclared) epidemics, material shortages, insurrection, act (or omissions) of Buyer or Buyer's contractors/suppliers or agents, any act (or omission) by any governmental authority, strikes, labor disputes, transportation shortages, or vendor non-performance. The delivery or performance date shall be extended for a period equal to the time lost by reason of delay or non-performance, plus such additional time as may be necessary to overcome the effect of the delay or non-performance. If delivery or performance is delayed for a period exceeding 180 (one hundred and eighty) days, either Party may terminate this Agreement without further liability provided that Seller shall be paid an amount equal to that which would be payable to Seller under the article entitled "Termination". If Seller is delayed by any acts (or omissions) of Buyer, or by the prerequisite work of Buyer's other contractors or suppliers, Seller shall be entitled to an equitable adjustment in schedule, price and/or performance, as applicable.
12. **Emergencies.** If the safety of Seller's personnel is threatened or likely to be threatened by circumstances outside the reasonable control of Seller, including but not limited to war, armed conflict, civil unrest, riots, terrorism, kidnapping, presence of or exposure to hazardous materials, unsafe working conditions, or by the threat of such circumstances or a lack of adequate protections against such circumstances, Seller shall be entitled to take all necessary steps to ensure the security and safety of its personnel including the evacuation of personnel until such circumstances no longer apply. Any such occurrence shall be considered an excusable delay event. Buyer shall reasonably assist in the event of any such evacuation.
13. **Confidentiality, Intellectual Property.** Both Parties agree to keep confidential the other Party's proprietary non-public information, if any, which may be acquired in connection with this Agreement. Buyer will not, without Seller's advance written consent, subject Equipment to testing, analysis, or any type of reverse engineering. Seller retains all



intellectual property rights including copyright which it has in all drawings and data or other deliverables (including the Equipment) supplied or developed under this Agreement. Buyer agrees that it will not file patent applications on the Equipment or any development or enhancement of the Equipment, or of processes and methods of using the Equipment, without Seller's express prior written permission. Buyer further agrees that in any event any such patents will not be asserted against Seller or its other buyers based upon purchase and use of such Equipment. Seller grants to Buyer a non-exclusive, non-terminable, royalty free license to use the intellectual property embedded in Equipment delivered to and paid for by the Buyer, as well as any drawings, design or data delivered to and paid for by the Buyer, for the purposes of owning, financing, using, operating and maintaining the relevant Equipment at Buyer's site. Such license may only be assigned to a subsequent owner of the Equipment or to an operations and maintenance subcontractor. Such license does not extend to the re-creation of the Equipment or the manufacture of spares or consumables by Buyer or third parties.

Any software Seller owns and provides pursuant to this Agreement shall remain Seller's property. Seller provides to Buyer a limited, non-exclusive and terminable royalty free project-specific license to such software for the use, operation or maintenance at Buyer's site of any Equipment purchased hereunder to which the software is a necessary component. Buyer agrees not to copy, sub-license, translate, transfer, reverse engineer, or decode the software.

Seller shall indemnify and hold harmless Buyer from any rightful claim of any third party that any Equipment or Service infringe a patent in effect in the USA, or country of delivery (provided there is a corresponding patent issued by the USA), or USA copyright or copyright registered in the country of delivery. If the Buyer notifies the Seller promptly of the receipt of any such claim, does not take any position adverse to the Seller regarding such claim and gives the Seller information, assistance and exclusive authority to settle and defend the claim, the Seller shall, at its own expense and choice, either (i) settle or defend the claim and pay all damages and costs awarded in it against the Buyer, or (ii) procure for the Buyer the right to continue using the Equipment or Service, or (iii) modify or replace the Equipment or Service so that it becomes non-infringing, or (iv) remove the infringing Equipment and refund the price. The above paragraph shall not apply to any misuse of Equipment or Equipment which is manufactured to the Buyer's design, or to alleged infringement arising from the combination, operation, or use of any Equipment or Services with other equipment or services when such combination is part of any allegedly infringing subject matter. The foregoing list of sub-sections (i), (ii), (iii), and (iv) and related terms state the entire liability of the Seller for intellectual property infringement by any Equipment or Service.

- 14. Limitations on Liability.** Notwithstanding anything else contained in this Agreement, to the maximum extent permitted by law, and regardless of whether a claim is based in contract (including warranty or indemnity), extra-contractual liability, tort (including negligence or strict liability), statute, equity or any other legal theory:
- a. THE TOTAL LIABILITY OF THE SELLER AND OF ITS INSURER FOR ALL CLAIMS ARISING OUT OF OR RELATING TO THE PERFORMANCE OR BREACH OF THIS AGREEMENT OR USE OF ANY EQUIPMENT OR SERVICES SHALL NOT EXCEED THE TOTAL PRICE PAID BY BUYER UNDER THIS AGREEMENT OR (IN THE CASE OF AN AGREEMENT FOR SERVICES WITH A TERM OF MORE THAN ONE YEAR) THE ANNUAL PRICE PAYABLE BY BUYER UNDER THIS AGREEMENT;
 - b. IN NO EVENT SHALL SELLER BE LIABLE FOR ANY LOSS OF PROFIT OR REVENUES, LOSS OF PRODUCTION, LOSS OF USE OF EQUIPMENT OR SERVICES OR ANY ASSOCIATED EQUIPMENT, INTERRUPTION OF BUSINESS, COST OF CAPITAL, COST OF REPLACEMENT WATER OR POWER, DOWNTIME COSTS, INCREASED OPERATING COSTS, CLAIMS OF BUYER'S CUSTOMERS FOR SUCH DAMAGES, OR FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, INDIRECT, PUNITIVE OR EXEMPLARY DAMAGES;
 - c. SELLER'S LIABILITY SHALL END UPON EXPIRATION OF THE APPLICABLE WARRANTY PERIOD, PROVIDED THAT BUYER MAY CONTINUE TO ENFORCE A CLAIM FOR WHICH IT HAS GIVEN NOTICE PRIOR TO THAT DATE BY COMMENCING AN ACTION OR ARBITRATION, AS APPLICABLE UNDER THIS AGREEMENT, BEFORE EXPIRATION OF ANY STATUTE OF LIMITATIONS OR OTHER LEGAL TIME LIMITATION BUT IN NO EVENT – TO THE EXTENT PERMITTED BY APPLICABLE LAW – LATER THAN FIVE (5) MONTHS AFTER EXPIRATION OF SUCH WARRANTY PERIOD.

For the purposes of this article, "Seller" shall mean Seller, its affiliates, subcontractors and suppliers of any tier, and their respective agents and employees, individually or collectively. If Buyer is supplying Seller's Equipment or Services to a third party, Buyer shall require the third party to agree to be bound by this article. If Buyer does not obtain this agreement for Seller's benefit for any reason, Buyer shall indemnify and hold Seller harmless from all liability arising out of claims made by the third party in excess of the limitations and exclusion of this article.



15. **Termination.** This Agreement and any performance pursuant to it may be terminated by either Party, and the consequences of such termination shall be as set out in the next paragraph, if the other Party
- d. becomes insolvent, makes an assignment for the benefit of its creditors, has a receiver or trustee appointed for the benefit of its creditors, or files for protection from creditors under any bankruptcy or insolvency laws; or
 - e. fails to make any payment when due or to establish any payment security required by this Agreement, or commits a material breach or defaults in its material obligations under this Agreement, and such default is not cured within thirty (30) days of written notice from the other Party.

Upon the termination of this Agreement by Buyer for cause (i) Seller shall reimburse Buyer the difference between that portion of the Agreement price allocable to the terminated scope and the actual amounts reasonably incurred by Buyer to complete that scope, and (ii) Buyer shall pay to Seller (a) the portion of the Agreement price allocable to Equipment completed, and (b) amounts for Services performed before the effective date of termination. Upon the termination of this Agreement by Seller for cause Buyer shall pay to Seller within thirty (30) days of receipt of invoice the price of all Equipment or Services delivered at the date of termination, plus an amount equal to all costs and expenses incurred in the engineering, sourcing, financing, procurement, manufacture, storage and transportation of the Equipment including materials, work in progress and any cancellation charges assessed against Seller by Seller's suppliers including reasonable overhead and profit on all such costs and expenses. Alternatively, if any schedule of termination payments has been agreed between the Parties, Buyer shall pay to Seller within thirty (30) days of receipt of invoice the amounts set out in that schedule.

Seller shall have the right to suspend performance upon written notice to Buyer in any case where Seller would have the right to terminate the Agreement under this article, without prejudice to Seller's right to terminate this Agreement for cause. Any cost incurred by Seller in accordance with any such suspension (including storage costs) shall be payable by Buyer upon submission of the Seller's invoice(s). Performance of the Seller's obligations shall be extended for a period of time reasonably necessary to overcome the effects of such suspension.

16. **Governing Law, Dispute Resolution.** This Agreement shall be governed by the substantive laws of the State of New York. In the event of a dispute concerning this Agreement, the complaining Party shall notify the other Party in writing thereof. Management level representatives of both Parties shall meet at an agreed location to attempt to resolve the dispute in good faith. Should the dispute not be resolved within thirty (30) days after such notice, the complaining Party shall seek remedies exclusively through arbitration. The seat of arbitration shall be the federal district court in Philadelphia, PA, and the rules of the arbitration will be the Commercial Arbitration Rules of the American Arbitration Association, which are incorporated by reference into this article.

Notwithstanding the foregoing, each Party shall have the right to commence an action or proceeding in a court of competent jurisdiction, subject to the terms of this Agreement, in order to seek and obtain a restraining order or injunction to enforce the confidentiality intellectual property provisions set forth in the first two paragraphs of article 13; nuclear use restrictions set forth in article 17, or to seek interim or conservatory measures not involving monetary damages.

17. **No Nuclear Use.** Equipment and Services sold by Seller are not intended for use in connection with any nuclear facility or activity, the Buyer warrants that it shall not use or permit others to use the Equipment or Services for such purposes, without the advance written consent of Seller. If, in breach of this, any such use occurs, Seller (and its parent, affiliates, suppliers and subcontractors) disclaims all liability for any nuclear or other damage, injury or contamination, and, in addition to any other rights of Seller, Buyer shall indemnify and hold Seller (and its parent, affiliates, suppliers and subcontractors) harmless against all such liability.
18. **Export Control.** Seller's obligations are conditioned upon Buyer's compliance with all USA and other applicable trade control laws and regulations. Buyer shall not trans-ship, re-export, divert or direct Equipment (including software and technical data) other than in and to the ultimate country of destination declared by Buyer and specified as the country of ultimate destination on Seller's invoice.
19. **Changes.** Each Party may at any time propose changes in the schedule or scope of Equipment or Services. All changes to the Equipment or Services shall be subject to mutual agreement via a written change order or variation, which shall only become effective once signed by both Parties. The scope, Agreement price, schedule, and other provisions will be equitably adjusted to reflect additional costs or obligations incurred by Seller resulting from a change, after Seller's proposal date, in Buyer's site-specific requirements or procedures, or in industry specifications, codes, standards, applicable laws or regulations. It shall be acceptable and not considered a change if Seller delivers



Equipment (including Equipment replacement under warranty) that bears a different, superseding or new part or version number compared to the part or version number listed in the Agreement, provided that in no circumstance shall this affect any other of Seller's obligations including those set forth in article 6.

20. **Conflicts; Survival, Assignment.** If there is any conflict between this Agreement and any written proposal or quotation provided by Seller, then the terms and conditions set forth in this Agreement shall prevail. If any term or condition of this Agreement or any accompanying terms and conditions are held invalid or illegal, then such terms and conditions shall be reformed to be made legal or valid, or deleted, but the remaining terms and conditions shall remain in full force and effect, and this Agreement shall be interpreted and implemented in a manner which best fulfills Parties' intended agreement. Those provisions which by their nature remain applicable after termination shall survive the termination of this Agreement for any reason. Seller may assign or novate its rights and obligations under the Agreement, in whole or in part, to any of its affiliates or may assign any of its accounts receivable under this Agreement to any party without Buyer's consent, and the Buyer hereby agrees, by signing this Agreement, to such assignment and to execute any document that may be necessary to complete Seller's assignment or novation. This Agreement shall not otherwise be assigned by either Party without the other Party's prior written consent, and any assignment without such consent shall be void.

Seller may (i) manufacture and source the Equipment and any part thereof globally in the country or countries of its choosing; and (ii) may subcontract portions of the Services, so long as Seller remains responsible for such.

21. **No Third Party Beneficiary.** Except as specifically set forth in the article entitled "Limitations on Liability" and "No Nuclear Use", this Agreement is not intended to, and does not, give to any person who is not a party to this Agreement any rights to enforce any provisions contained in this Agreement.
22. **Entire Agreement.** This Agreement embodies the entire agreement between Buyer and Seller and supersedes any previous documents, correspondence or agreements between them. No modification, amendment, revision, waiver, or other change shall be binding on either Party unless agreed in writing by the Party's authorized representative. Any oral or written representation, warranty, course of dealing, or trade usage not specified herein shall not be binding on either Party. Each Party agrees that it has not relied on, or been induced by, any representations of the other Party not contained in this Agreement.

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9 Seller's Warranty - ZeeBlok Membrane Module

2 Year Full Replacement – Standard

This schedule sets out the warranty with respect to ZeeBlok Membrane Modules ("Membrane Modules"). No other warranties, expressed or implied are made in connection with the sale of these products, including, without limitation, warranties as to fitness for any particular purpose or use or merchantability of these products. The warranty provided herein will be the exclusive and sole remedy of Buyer, and in no event will the Seller be liable for any special, direct, indirect or consequential damages, including, without limitation, loss of profits. This warranty is not transferable.

1 Product

This warranty applies to only the Membrane Modules supplied under the Contract of Sale. Membrane Module means a complete Membrane Module. This warranty does not cover air piping to the Membrane Module, permeate piping from the Membrane Module, piping connection fittings, connecting hardware and cassette frames with their associated components including but not limited to spacers, aerator tubes, aerator assemblies, screen, module dummies or module blanks.

Identification: Membrane Modules are shipped by the Seller with a serial number identification which confirms their place in the cohort set of Membrane Modules covered by this Membrane Module warranty.

2 Seller

ZENON Environmental Corporation is the name of the Seller and is the Seller offering this warranty. The Seller may assign this warranty to other GE affiliates.

3 Buyer

Buyer means DVI Construction Group, Inc.

4 Project

Project means the 384 membrane modules sold under this proposal number 156743.

5 Contract of Sale

Contract of Sale means the sales contract governing the sale of Membrane Module(s) for the Project between Buyer and the Seller or its GE affiliate.

6 Scope of Warranty

The Seller warrants that its Membrane Module(s) will be free of defects due to faulty materials or errors in manufacturing workmanship.

Regular Membrane Module inspection and normal fiber repair shall be the responsibility of Buyer.

All replacement Membrane Modules will be shipped on the basis of INCOTERMS 2010 FCA GE Manufacturing facility.

All ancillary costs including but not limited to bagging, boxing, crating, freight, freight insurance, applicable taxes, import duties, certifications, brokerage, receiving, forklift services, storage at site, re-attachment hardware, hose/clamp/camlock replacement, crane services, installation, fiber repair materials, glycerin flushing, commissioning and waste disposal are the responsibility of Buyer.

Full Replacement – Full Replacement means that in the case of a valid warranty claim for a Membrane Module failure, Buyer receives a replacement Membrane Module and does not pay for the value of use of the Membrane Module prior to failure.

Prorated Replacement – Prorated Replacement means Buyer pays for actual use of a membrane module from which Buyer has derived value over time. Prorated Replacement allows the Seller to pay reasonable compensation under warranty for any product use not enjoyed by Buyer due to premature failure.

The ratio of Full Replacement to Prorated Replacement in this Warranty is set out in Item 8 of Section 8.

7 Warranty Start Date

For the first set of membrane modules in a plant, this membrane warranty will start on the earlier of:

- f. The date that installation of the original Membrane Module(s) has been substantially completed, or



- g. Six months from the date of shipment of the original Membrane Module(s) to Buyer.

For replacement or expansion membranes, this membrane warranty will start on the earlier of:

- a. The date of installation, or
- b. 1 month from the date of delivery to site.

8 Warranty Duration

Total Warranty Duration: a total of **24** months composed of a Base Period and an Extended Period.

Base Period with Full Replacement: **24** months

All purchasers of ZeeBlok Membrane Modules are entitled to this Base Period of Full Replacement warranty coverage without purchasing an extended Seller's Warranty.

Extended Period with Full Replacement: a total of **0** months following the Base Period

Replacement Membrane Modules are covered by warranty only to the extent of the warranty of the original Membrane Module which has been replaced. At all events, this warranty shall expire and be of no force or effect **24** months following the Warranty Start Date.

9 Notification of Claim

All claims filed under this warranty shall be made in writing by Buyer within 30 days of identifying a defect.

Buyer shall provide the following information:

- a. A description of the defect giving rise to the claim;
- b. Photographs showing the manufacturing defect;
- c. The serial number(s) of the Membrane Module(s) which is (are) the subject of the warranty claim; and
- d. Operating data and repair history for the life of Membrane Modules which are the subject of a warranty claim.

10 Verification of Claim

After receipt of written notification of a defect, the Seller will promptly undertake such investigations as, in the Seller's opinion, are necessary to verify whether a defect exists. The Seller reserves the right to require additional data as necessary to validate claims. Buyer may, in the course of these investigations, be requested to return Membrane Module(s) to the Seller for examination. The Seller may also conduct reasonable tests and inspections at Buyer's plant or premises. If the results of the investigation do not validate the defect claimed, Buyer will reimburse the Seller for all reasonable expenses associated with said investigation, including expenses for all tests, inspections, and associated travel.

11 Satisfaction of Claims

The Seller will have the right to satisfy claims under this warranty in a flexible manner. Such flexibility may include the repair of existing Membrane Modules or changes in operating protocols or Membrane Module replacement or by upgrading failed Membrane Modules with newer Membrane Module(s) that may embody design and efficiency improvements. Buyer consents to the supply of replacement Membrane Modules which may be of a different design than original Membrane Modules.

12 Operating Information

To maintain the Membrane Module warranty, membrane system operation records from initial start-up date until claim must be maintained by Buyer and made available to the Seller upon request. Records must be provided in sufficient detail to verify uninterrupted compliance with the Seller's Operations and Maintenance Manual prepared by the Seller and supplied to Buyer as part of the Contract. At a minimum, operation data must include information on feed water quality, temperatures, flows, trans-membrane pressures, aeration rates, permeate quality, cleaning intervals, cleaning chemical concentrations, elapsed time since start-up, relevant analytical data and reporting of any screen bypass events.

Buyer shall maintain and share access to a single reference copy in electronic form of a Membrane Module map containing the history of activity by Membrane Module. Buyer shall log its procedures performed related to a Membrane Module including relocation of Membrane Modules, repairs, replacements and any other noteworthy events.

Buyer authorizes the Seller to conduct any reasonable review of operation and maintenance records or to inspect facilities where Membrane Modules are installed, upon reasonable notice to Buyer. Such reviews and/or inspections are intended to



also assist the Seller and Buyer in detection of membrane system faults and to optimize the care and operation of the Membrane Modules.

13 Limitation of Warranties

Occurrence of any of the following as reasonably determined by the Seller will void this warranty:

- a. A material failure to operate the membrane system in accordance with the system Operations and Maintenance Manual, including material failure to adhere to the specified Membrane Module cleaning procedures and the use of anything other than Seller-approved Membrane Module cleaning agents.
- b. Failure to adhere to the preventive maintenance program as presented in the system Operations and Maintenance Manual.
- c. Failure to ensure correct operation and/or functioning of the screening equipment.
- d. Introduction of destructive foreign materials into the Membrane Module tanks. Destructive foreign materials may include natural or human-made materials that are introduced into the membrane system influent channel or tanks originating from construction and maintenance activities or from inadequate pretreatment or from aquatic species including clams and snails or from damage to the tank or tank coating. Buyer shall be responsible to maintain correct function of the screen mechanism and to flush tanks of accumulated sand at the tank bottom.
- e. Failure to install and maintain operating data acquisition and electronic data transmission functions at the plant.
- f. Physical abuse or misuse, incorrect removal or installation of Membrane Modules by non-Seller personnel including fiber damage caused by operator error in handling of Membrane Modules or cassettes.
- g. Unauthorized alteration of any components or parts originally supplied by the Seller.
- h. Intentional damage.

14 Return Procedure

In the event that the return of a Membrane Module is required pursuant to this warranty, Buyer will first obtain a Return Goods Authorization (RGA) number from the Seller. Membrane Module(s) shipped to the Seller for warranty examination must be shipped freight prepaid. If Buyer desires temporary replacement Membrane Module(s) to replace those alleged to be defective and returned to the Seller for warranty examination, Buyer shall be responsible for the cost associated with any such replacements until examination of the returned Membrane Modules pursuant to this warranty is complete. Any Membrane Module examined by Seller as part of a warranty claim where the Membrane Module is subsequently found to be performing as warranted or where a Membrane Module failure is not covered under the warranty will be returned to Buyer, freight collect.



10 Signed Agreement

By virtue of having issued this proposal GE hereby signals their intent to enter into an agreement with DVI. DVI acknowledges that they have read and understood this Agreement and agree to be bound by the terms and conditions specified in it.

Offered by Legal Entity: ZENON Environmental Corporation, also known as GE or Seller

Accepted by Legal Entity: DVI Construction Group, Inc. also known as DVI or Buyer

Authorized Signature By: _____

Title: _____

Signature _____

Date: _____

Signature: x _____

Purchase Order No: _____

Upon acceptance of this proposal, please forward the following either

- by email with .pdf attachments or
- by postal mail or
- by fax.

- 1) this signature page completed
- 2) a hard copy of your purchase order, and
- 3) any required tax exemption certificates

ServicePOCentral@ge.com
 or
 GE Water & Process Technologies
 Attention: Contracts Administrator
 3239 Dundas Street West,
 Oakville, Ontario, Canada L6M 4B2
 or
 Fax No.: 905 469 2243

This agreement comes into force when GE has issued a formal acceptance of DVI's Purchase order or formal acceptance of this DVI signed agreement.

EQUIPMENT/DESCRIPTION	MODEL & PART	QTY	SIZE	MATERIAL	STARTUP	RECOMMENDED	1 YR	2 YR	3 YR
Pressure, Differential Pressure (Flow and Level)									
Differential Pressure Transmitter	264DS/264DSFSKB2A1V1L1B212N6	1							
Differential Pressure Transmitter	264DS/264DSFSSB2A1V1B212N2	1							
Differential Pressure Transmitter	264DS/264DSFSKB2A1V1B212N2	2							
Differential Pressure Transmitter	264DS/264DSHSSB2A1V1L1B212N2	1							
Gauge Pressure Transmitter	264HS/264HSHHBA1L1B212N2	1							
Gauge Pressure Transmitter	264HS/264HSHHBA1B212N2	2							
SST 3-Valve Manifold	HM531U3399412	3							
SST 5-Valve Manifold	HM761U3399412	2							
Calibration Certificates for 8 pressure transmitters		8							
PUMPS									
Evaporator Feed Pump	3196/MTX/1-1/2x3-13 -PMP-3000								
Casing, 150 flat face	249-63 1203	1		316SS		X			
Casing, w/drain, S&D gauge	RC04820A091203	1		316SS		X			
Impeller, SA w/tfl O-Ring	0100-537 1203	1		316SS		X			
Adapter, frame assy	RD11802A 1013	1		Ductile Iron		X			
Bearing, ball	8049-30904	1			X				
Plug, Pipe 1/2-14 NPT	63122 4 2210	1		Carbon Steel		X			
Shaft Assy w/slv design	R104-733 2238	1		Alloy STL 4140		X			
Sleeve, Shaft	73705X 2229	1		316SS	X				
Housing, bearing	D04872A 1000	1		Cast Iron		X			
Locknut, brg SKF N-09	8601-0009	1				X			
Bearing, ball 6309	8050-30960	1			X				
Bedplate, 258 Pull	D06715A 3201	1		Carbon Steel		X			
Cov, ST Box SA Taper Bore	RC04111A011203	1		316SS		X			
FR, SA STD Oil, Purge SP Oil	RD11740A011003	1		Cast Iron		X			
Hub 1.625, 30T31	85493 20	1				X			
Hub 1.125, 30T31	85493 12	1				X			
Spacer Hub, 30T31/35	85488 1	2				X			
Grid assembly, 1030T	85450 3	1				X			
Foot, Frame Assy 10" Ctrline Kit	RB05634A 1003	1		Cast Iron		X			
Window, sight	A01154A05	1				X			
Screw, self tap	80722 2	8				X			
Seal, laby outboard (VBXX-D)	A04951A219	1				X			
Seal, Laby inboard (VBXX-D)	A04951A218	1				X			
Gasket, casing (.062 thk)	70782 28 5127	1		Aramid Fiber w/EPDM Rub	X				
Stud	27177 564 2228	4		304SS		X			
Washer 1/2" SAE Plain	49519 57 2228	4		304SS		X			
Nut, Hex	49507 7 2228	4		304SS		X			
Nut, Hex	49507 3 2228	2		304SS		X			
Plug, Pipe 3/8-18 NPT	63122 3 2229	3		316SS		X			
Gasket, Adapter	73078 5163	1		Packing Nitrile RBR 3047	X	X			
Ring, RTNG	58101 393	1				X			
Screw, HHC 5/8"-11 x 1-1/2"LG	49511 252 2228	16		304SS		X			
Screw, HHC 1/2"-13 UNC 1-1/2"LG	49511 204 2210	4		Carbon Steel		X			
Bolt, Hex TAP 1/2-13 x 1.50"LG	49521 204 2210	3		Carbon Steel		X			
Bolt, Hex TAP 1/2-13 x 1.50"LG	49521 204 2210	3		Carbon Steel		X			
Screw, HHC 1/2"-13 UNCx1-1/4"LG	49511 203 2210	2		Carbon Steel		X			

Stud	27177 715 2228	2	304SS	X				
Lockwshr, brg SKF W-09	8910-0009	1		X				
JC5610Q HSP-38068 XF551XO58H	M58221	1		X				
Key, square end	49568 118 2213	1	Carbon Steel	X				
Plug, pipe	A00152A01	1		X				
Plug, pipe	57042 103	4		X				
Plug pipe Hex HD .250" 18 NPT	63122 2 2210	1	Carbon Steel	X				
Plug, Pipe	7301 008	1		X				
Plug, pipe 1" NPTF	7301 0016	1		X				
Plug, Pipe	57042 103	2		X				
O-Rg AS568-28	C02495A28 6359	1	Teflon	X				
Bolt, Hex Tap 1/2-13 x 1.50"LG	49521 204 2228	3	304SS	X				
Nut, Hex STD THD HVY JAM .50IN	49507 57 2210	3	Carbon Steel	X				
Pin, Dowel	73523 3	2		X				
O-Rg AS568-245	C02495A2455302	1	Buna-N	X				
O-ring	C02495A2165304	1	Viton	X				
O-rg AS568-32	C02495A32 5302	1	Buna-N	X				
O-rg AS568-224	C02495A2245304	1	Viton	X				
O-rg AS568-39	C02495A39 5302	1	Buna-N	X				
O-rg AS568-134	C02495A1345304	1	Viton	X				
O-rg AS568-124	C02495A1245304	1	Viton	X				
Guard, Cplg SA All 316SS	0A09730A C3211	1	316 STN STL	X				
Guard, Shaft assembly	0B02278A043260	1	304SS ASTM A240	X				
Lockwasher	49520 124	2		X				
Kit, maintenance Seal 13" MT	R196-MKM13Z	1		X				
Kit, Repair (oil) MTI	R196MTRKOZ	1		X				
Power End, 3196 Mti Oil WS 4140	P1600M0S00Z050	1		X				
EVAPORATOR RECIRCULATION PUMP	3180/L/10x12-16 -PMP-3003							
Casing, w/taps & w/cmtr's	0D03215A041216C	1	CD4MCU	X				
Impeller, w/O-Rg 090775 63 1216	0259C170M	1	CD4MCU	X				
Cover, End	A06561A 1001	1	Cast Iron	X				
Brg, Ball set SKF 7315 beagy	R8057 3 1521	1		X				
Shaft, assembly	RD04875A 2249	1	Alloy STL 4340	X				
Sleeve, shaft	C03312A 2230	1	Carpenter 20	X				
Housing, brg oil SA	RC03213A1A1000	1	Cast Iron	X				
Locknut brg AN15	8601-3015	1		X				
Sideplate, suction w/cmtr's	C02416A02 1216C	1	CD4MCU	X				
Key, Impeller	A03190A03 2213	1	Carbon Steel	X				
Baseplate	D11962A 3201	1	Carbon Steel	X				
Cover, taper w/cmtr's	C06003A 1216C	1	CD4MCU	X				
Frame SA STD Oil/Purge Oil MST	RD04824A1A1000	1	Cast Iron	X				
VPE Installation Kit	RC05252A 1362	1	Duplex (25CR-5N1-MO-N)	X				
Hub 3.375, 80T31	85533 48	1		X				
Hub 2.375, 80T31	85533 32	1		X				
Spacer Hub, 80T31/35	85530 8	1		X				
Grid Assembly, 1080T	85450 8	1		X				
Spacer Hub, 80T31/35	85530 1	1		X				
Screw, Soc Head Cap	A03723A82 2443	1	ISO 898-1 12.9	X				
Foot, Frame	C03078A 1001	1	Cast Iron	X				

Retainer, Bearing	C03225A 1000	1	Cast Iron	X				
Nut, Impeller	B02152A03 1216	1	CD2MCU	X				
Window, Sight	A01154A05	1		X				
Screw, Tap	81720 16	8		X				
Seal, Oil Labrinth VBX	A04951A93	1		X				
Seal, Oil Labrinth VBX	A04951A93	1		X				
Gasket, Casing (.062 thk)	70782 175 5127	1	Aramid Fiber w/EPDM Rub	X				
Screw, Set	A02819A47 2440	3	SS F738M-91 A4-50AF	X				
Stud	A02815A40 2441	4	SS F738M A1-50 AF	X				
Washer 5/8" SAE Plain	49519 59 2228	4	304SS	X				
Nut, Hex	A02089A16 2441	4	SS F738M A1-50 AF	X				
Stud	A02815A37 2441	4	SS F738M A1-50 AF	X				
Nut, Hex	A02089A10 2441	4	SS F738M A1-50 AF	X				
Plug, pipe	92471 5	1		X				
Plug, pipe	57042 103	1		X				
Plug, pipe 1/2-14 NPT	63122 4 2230	3	Carpenter 20	X				
Plug, pipe 1/2-14 NPT	63122 4 2229	4	316SS	X				
Gasket, sideplate	A03189A03 5127	1	Aramid Fiber w/EPDM Rub	X				
Screw, HHC	A02818A1432443	16	ISO 898-1 12.9	X				
Screw, Hex Cap	A02818A1272442	8	CS ISO 898-1 8.8	X				
Screw, HHC	A02818A1282442	4	CS ISO 898-1 8.8	X				
Screw, HHC	A02818A1242442	2	CS ISO 898-1 8.8	X				
Screw, HHC	A02818A1282442	4	CS ISO 898-1 8.8	X				
Lockwshr, brg SKF W-15	8910-0015	1		X				
M-Seal, Type 5620PR, HSP-43703	259C170SL	1		X				
Key, Coupling	49568 403 2213	1	Carbon Steel	X				
Plug, pipe	A00152A02	1		X				
Plug, pipe	57042 103	4		X				
Plug, pipe	A00152A02	1		X				
Bearing, Roller NUP-314ECP	8060-31314	1		X				
O-Rg AS568-148	C02495A1486359	1	Teflon	X				
O-Rg AS568-148	C02495A1486359	1	Teflon	X				
Nut, Hex	A02089A16 2442	4	Carbon Steel	X				
O-ring AS568-264	C02495A2645302	1	Buna-N	X				
Guard, Cplg SA all 316SS	0A09803A F3211	1	316 STN STL	X				
Shaft Guard	B03816A14 6910	2	Carbon Steel	X				
Lug, Casing	B02149A 1013	16	Ductile Iron	X				
SEED/WASTE PUMP	3196/STX/1x1-1/2-6 -PMP-3002							
Casing, 150 Flat Face w/CMTR's	104-554 1216C	1	CD4MCU	X				
Casing 150FF w/drn, SD	RC04800A091216C	1	CD4MCU	X				
Implr, SA w/TFL O-Ring 5 Vanenc	076781 1216C	1	CD4MCU	X				
Bearing, Ball	8049 30604	1		X				
Plug, Pipe 1/2-14 NPT	63122 4 2210	1	Carbon Steel	X				
Shaft Assy w/slv Design	R104-435 2238	1	Alloy STL 4140	X				
Sleeve, Shaft	76772X 2230C	1	Carpenter 20	X				
Housing, Brg pull	C03340A 1000	1	Cast Iron	X				
Locknut, Brg SKF N-06	8601 0006	1		X				
Bearing, ball 6207	8050 20760	1		X				
Bedplate, 148 pull	D06711A 3201	1	Carbon Steel	X				

Cov, ST Box TB/VPE w/CMTR's NC	RB04592A191216C	1	CD4MCU	X			
Frame, SA STD Oil, Purge SP Oil	RD11739A011013	1	Ductile Iron	X			
Hub 1.375, 20T31	85492 16	1		X			
Hub .875, 20T31	85492 8	1		X			
Spacer Hub, 20T31/35	85487 1	2		X			
Grid Assembly, 1020T	85450 2	1		X			
Window, Sight	A01154A05	1		X			
Screw, Self Tap	80722 2	8		X			
Seal Laby Outboard (VBXX-D)	A04951A217	1		X			
Seal, Laby Inboard (VBXX-D)	A04951A216	1		X			
Gasket, casing (.062 thk)	70782 81 5127	1	Aramid Fiber w/EPDM Rub	X			
Stud	27177 604 2228	4	304SS	X			
Nut, hex	49507 4 2228	4	304SS	X			
Nut, hex	49507 3 2228	2	304SS	X			
Gland Plugs	61322 2 2229	2	316SS	X			
Ring, Rtng	58101 281	1		X			
Screw, HHC 5/8" -11 x 1 1/2" LG	49511 252 2228	4	304SS	X			
Bolt, Hex Tap 3/8-16 x 1.25" LG	49521 104 2210	3	Carbon Steel	X			
Bolt, Hex Tap 3/8-16 x 1.25" LG	49521 104 2210	3	Carbon Steel	X			
Stud	27177 664 2228	2	304SS	X			
Lockwshr, brg skf w-6	8910-0006	1		X			
M-Seal, type 586/8S PSD-2876	732F900SL	1		X			
Key, square end	49568 61 2213	1	Carbon Steel	X			
Plug, pipe	A00152A01	1		X			
Plug, pipe	57042 103	4		X			
Plug pipe hex HD .250" 18 NPT	63122 2 2210	1	Carbon Steel	X			
Plug, pipe	7301-0008	1		X			
Plug, pipe 1" NPTF	7301-0016	1		X			
Plug, pipe	57042 103	2		X			
O-ring AS568-23	C02495A23 6359	1	Teflon	X			
Bolt, Hex Tap 3/8-16 x 1.25" LG	49521 104 2228	2	304SS	X			
Nut, Hex std thd hvy jam .37in	49507 54 2210	3	Carbon Steel	X			
O-ring AS568-236	C02495A2365302	1	Buna-N	X			
O-ring AS568-118	C02495A1185304	1	Viton	X			
O-ring AS568-24	C02495A24 5302	1	Buna-N	X			
O-ring AS568-126	C02495A1265304	1	Viton	X			
O-ring AS568-38	C02495A38 5302	1	Buna-N	X			
O-ring AS568-134	C02495A1345304	1	Viton	X			
O-ring AS568-21	C02495A21 5304	1	Viton	X			
Guard, cplg sa all 316SS	0A09729A B3211	1	316 STN STL	X			
Guard, shaft assembly	0B02278A013260	1	304SS ASTM A240	X			
Kit, maintenance 6" STI	R196-MKS6Z	1		X			
Kit, Repair (oil) STI	R196STRKOZ	1		X			
Power End, 3196STi Oil WS 414NC	P1600S0S00Z050	1		X			
DISTILLATE PUMP	3196/MTX/1-1/2X3-13						
Casing, 150 flat face	249-63 1203	1	316SS				
Casing, w/drain, bypass, S&D gage	RC04820A111203	1	316SS				
Implr, SA w/TFL O-ring	0100-537 1203	1	316SS	X			
Adapter, frame assy	RD11802A 1013	1	Ductile Iron	X			

Bearing, ball	8049-30904	1			X				
Plug, pipe 1/2-14 NPT	63122 4 2210	1		Carbon Steel					
Shaft assy w/slv design	R104-733 2238	1		Alloy STL 4140		X			
Sleeve, shaft	73705X 2229	1		316SS	X				
Housing, bearing	D04872A 1000	1		Cast Iron					
Locknut, brg skf N-09	8601-0009	1				X			
Bearing, ball 6309	8050-30960	1			X				
Bedplate, 258 Pull	D06715A 3201	1		Carbon Steel					
Cov, st box sa big bore (std)	RC04060A011203	1		316SS		X			
FR, SA STD Oil, Purge SP Oil	RD11740A011003	1		Cast Iron					
Hub 1.625, 30T31	85493 20	1							
Hub 1.125, 30T31	85493 12	1							
Spacer Hub, 30T31/35	85488 1	2							
Grid Assembly, 1030T	85450 3	1							
Foot, Frame assy 10" Ctrline	RB05634A 1003	1		Cast Iron					
Bushing, RSTR	72256 6	1							
Window, Sight	A01154A05	1							
Screw, Self Tap	80722 2	8							
Seal, Laby Outboard (VBXX-D)	A04951A219	1				X			
Seal, Laby Inboard (VBXX-D)	A04951A218	1				X			
Gasket, Casing (.062 thk)	70782 28 5127	1		Aramid Fiber w/EPDM Rub	X				
Stud	27177 564 2228	4		304SS					
Washer 1/2" SAE Plain	49519 57 2228	4		304SS		X			
Nut, Hex	49507 7 2228	4		304SS		X			
Nut, Hex	49507 3 2228	2		304SS		X			
Plug, Pressure Dryseal 1/2 NPTF	A06808A05 2229	1		316SS		X			
Plug, Pipe 3/8-18 NPT	63122 3 2229	3		316SS		X			
Gasket, Adapter	73078 5163	1		Packing Nitrile RBR 3047	X				
Ring, RTNG	58101 393	1			X				
Screw, HHC 5/8"-11 x 1 1/2"LG	49511 252 2228	16		304SS		X			
Screw, HHC 1/2"-13 UNC 1 1/2"LG	49511 204 2210	4		Carbon Steel		X			
Bolt, Hex Tap 1/2-13 x 1.50"LG	49521 204 2210	3		Carbon Steel		X			
Bolt, Hex Tap 1/2-13 x 1.50"LG	49521 204 2210	3		Carbon Steel		X			
Screw, HHC 1/2"-13 UNCx1 1/4"LG	49511 203 2210	2		Carbon Steel		X			
Stud	27177 715 2228	2		304SS		X			
O-Ring	C02495A2165304	1		Viton	X				
O-Ring AS568-32	C02495A32 5302	1		Buna-N	X				
O-ring AS568-224	C02495A2245304	1		Viton	X				
O-Ring AS568-39	C02495A39 5302	1		Buna-N	X				
O-Ring AS568-134	C02495A1345304	1		Viton	X				
O-Ring AS568-124	C02495A1245304	1		Viton	X				
Guard, Cplg SA ALL 316SS	0A03752A C3211	1		316 STN STL		X			
Guard, Shaft Assembly	0B02278A043260	1		304SS ASTM A240		X			
Lockwasher	49520 124	2				X			
Kit, Maintenance Seal 13"MTI	R196-MKM13Z	1			X				
Kit, Repair MT Oil MTI	R196MTRKOZ	1				X			
End, PWR 3196MTX Oil WS 4140	P1600M0S00Z050	1				X			
Lockwsher, brg skf W-09	8910-0009	1				X			
JC5610Q HSP-38068 XF551XO58H	M58221	1			X				

Key, Square End	49568 118 2213	1	Carbon Steel	X			
Plug, Pipe	A00152A01	1		X			
Plug, Pipe	57042 103	4		X			
Plug Pipe Hex HD .250" 18 NPT	63122 2 2210	1	Carbon Steel	X			
Plug, Pipe	7301-0008	1		X			
Plug, Pipe 1" NPTF	7301-0016	1		X			
Plug, Pipe	57042 103	2		X			
Bolt, Hex Tap 1/2-13 x 1.50"LG	49521 204 2228	3	304SS	X			
Nut, Hex STD THD HVY JAM .50in	49507 57 2210	3	Carbon Steel	X			
Pin, Dowell	73523 3	2			X		
O-RG AS568-245	C02495A2455302	1	Buna-N	X			
VALVES							
Automated Valves							
1" Valve 150 lb FLG SS Body	DU1BR21-FR-LT-X-666D	1					
3" Valve 150 lb Wafer CS Body	DU3BX2W1811A1V9	1					
Actuator SR 1017" lbs Spring End 80 PSI	AUB125SR10	1					
Actuator SR 0113" lbs Spring End, 80 PSI	AUB063SR10	1					
Actuator SR 3906" lbs Spring End, 80 PSI	AUB200SR10	1					
Actuator SR 0717" lbs Spring End, 80 PSI	AUB115SR10	1					
Solenoid 3-Way 120VAC Nema 4-4X Namur	AUS25NFAWR1	1					
Logix Digital Positioner w/Hart Protocol Nema	AU520SI02B1RSED000GM1	1					
1" Plug Valve	CV1790EB150PVDFGRTFM CV10	1					
2" Valve 150 lb Flg PVDF Lined Steel Body w/Glass Filled Teflon Seat	CV2790EB150PVDFGRTFM	1					
4" Plug Valve	CV4790EB150PVDFGRTFM CV240	1					
Manual Valves							
1/2" VBP2 Ball valve	T-21BVS4/T	1					
1" VBP3 Ball valve	T-21BV-FLANSI 150#	4					
1" VBP3 Ball valve	T-21BV-FLANSI 150#	17					
1.5" VBP3 Ball valve	T-21BV-FLANSI 150#	2					
2" VBP3 Ball valve	T-21BV-FLANSI 150#	1					
2" VBP3 Ball valve	T-21BV-FLANSI 150#	3					
1/2" VBS7 Ball valve	BF3K-TN-LT-X-666D	7					
.75" VBS7 Ball valve	BF3K-TN-LT-X-666D	2					
1" VBS7 Ball valve	BF3K-TN-LT-X-666D	35					
1" VBS7 Ball valve	BF3K-TN-LT-X-666D	1					
1.25" VBS7 Ball valve	BF3K-TN-LT-X-666D	1					
1.5" VBS7 Ball valve	BF3K-TN-LT-X-666D	3					
2" VBS7 Ball valve	EA-33NFSE-CB-2	1					
2" VBS7 Ball valve	BF3K-TN-LT-X-666D	7					
1/2" VCP2 Check valve	TU-BALL-CHK-E-CMB	1					
6" VCP8 Check valve	FLG-SWG-VLV-EPT	1					
1" VCC2 Check valve	701SW	1					
1" VCS7 Check valve		4					
1.5" VCS7 Check valve		1					
6" VCT8 Check valve	ARK2PFA	1					
4" VFC9 Butterfly valve	BX2L1811A1V0	1					
6" VFC9 Butterfly valve	BX2L1811A1V1	1					
6" VFP9 Butterfly valve	800-06-LC-2-1-T-02	2					
4" VFP9 Butterfly valve	T-57	2					

6" VFP9 Butterfly valve	T-57		2						
6" VFR9 Butterfly valve	6-892-822700h10		3						
6" VFR9 Butterfly valve	929-892-000		1						
1/2" VGC2 Gate valve	12111FHF-SW		2						
.75" VGC2 Gate valve	12111FHF-SW		6						
1" VGC2 Gate valve	12111FHF-SW		4						
3" VGC3 Gate valve	47XUF		2						
1" VGC7 Gate valve	12111FHF		1						
1" VGC7 Gate valve		1110	1						
1" VLC2 Glove valve	12141FHF		1						
1" VLS7 Glove valve		1310	1						
1" VPK3 Plug valve	790EB-150		6						
1.5" VPK3 Plug valve	790EB-150		2						
2" VPK3 Plug valve	790EB-150		3						
1/2" VPT3 Plug valve	T41A		1						
1" VPT3 Plug valve	T41A		15						
1" VPT3 Plug valve	T41A		4						
1.5" VPT3 Plug valve	T41A		1						
2" VPT3 Plug valve	T41A		2						
3" VPT3 Plug valve	T41A		1						
FEED PREHEATER									
Plate Pack									
Channel Plate assemblies	GXD-118-M-5-UP-186		1						
Replacement plate pack	GXD-118-M-5-UP-186		1						
AGITATORS									
Mixers									
Motor	Contact Factory		1				X		
Pinion Gear Pin	A8010104		1						
Single phase cord & switch		5298	1						
Motor gasket	A10797		1						
Pinion gear kit	Model "M5" gearbox/PG10333		1				X		
Helical Gear with Key	Model "M5" gearbox/DG10334		1				X		
Gear shaft	A2254		1						
Gearbox bearing	6206.RSJEM		1				X		
Gearbox seal		12545	1				X		
Gearbox gasket (G/M5)	A2978/A10712		1				X		
Star washer	W06		1				X		
Gear nut	N06		1				X		
Spool bearing kit							X		
3/4"	RB-12		1						
Shaft Seal: Sleeve	FlaktWoods		1	14				X	
Shaft Seal: O-Rings for Sleeve	FlaktWoods		1	14		X		X	
Shaft Seal: Carbon Ring Set	Espey		2	14		X		X	
Inlet Guide Vane Parts									
Inlet Guide Vanes: Replacement Bearing (set)	FlaktWoods		6						X
Inlet Guide Vanes: Replacement Seals (set)	FlaktWoods		6						X
Inlet Guide Vanes: Replacement Linkage (set)	FlaktWoods		6						X
Inlet Guide Vanes: Re-build Kit (brgs, seals, linkage)	FlaktWoods		1						X
Inlet Guide Vanes: Actuator	Metso/Neles		1						X

Inlet Guide Vanes: Actuator Positioner	Metso/Neles	1							X
Inlet Guide Vanes: Position Limit Switch (1pc. Only)	Metso/Neles	1							X
Lubrication System Parts									
Fan Bearing Lube System: Oil Filter Element	Hilco PH312-03-CG	16			X		X		
Fan Bearing Lube System: Breather	DMIC FBB-080-10	8			X		X		
Fan Bearing Lube System: Oil Pump Belt Set	Optibelt	2			X				
Fan Bearing Lube System: Oil Pump	IMO AA3G/NVPPCA118SC	1			X				
Fan Bearing Lube System: Oil Pump Motor Coupling	Lovejoy L095	1					X		
Fan Bearing Lube System: Mech. Pump Support Bearing & Coupling	Lovejoy L095	2					X		
Fan Bearing Lube System: Oil Pump Motor	Toshiba 2HP	1					X		
Fan Bearing Lube System: Oil Cooler	ITT SX2000K 04 030	1							X
Fan Bearing Lube System: Thermostatic Water Valve	TT 66100	1							X
Fan Bearing Lube System: Oil Heater/Thermostat	Watlow 2-36-37-120MJ	1							X
Fan Bearing Lube System: Tank Oil Level Switch	SOR 301A-F1A-B-A4-N4-WV	1							X
Fan Bearing Lube System: Oil Level/Temperature Gauge	G645-10-A-1	1							X
Fan Bearing Lube System: Oil Filter Diff. Pressure Switch	Ashcroft 451131FD25SXCSFFV8	1							X
Fan Bearing Lube System: Oil Flow Switch & Meter (Inboard)	Universal SN-ASB20DLM-6-125	1							X
Fan Bearing Lube System: Oil Flow Switch & Meter (Outboard)	Universal SN-ASB20DLM-6-125	1							X
Fan Bearing Lube System: Oil Flow Switch & Meter (Mech. Pump)	Universal SN-ASB40DLM-6-125	1							X
Fan Bearing Lube System: Oil Temp. RTD (No transmitter)	Rosemount 0068R21N00A025T26E5	1							X
Fan Bearing Lube System: Oil Temperature Gauge	Ashcroft 50E160E040-XCS-0	1							X
Fan Bearing Lube System: Oil Pressure Switch	Ashcroft B468B-XLE07	1							X
Fan Bearing Lube System: Oil Pressure Gauge	Ashcroft 45-1279-SS-04L-600KPA	1							X
Fan Bearing Lube System: Bearing Supply Hoses with Fittings		1							X
Fan Bearing Lube System: Mechanical Pump Hoses with Fittings		1							X
Coupling Parts									
Fan Coupling Rebuild Kit	Flender	1					X		
Optional Parts									
Impeller Mounting & Removal Tools	FlaktWoods	1							
Hydraulic Pump (Porta Power)	SKF	1							
Inlet Guide Vane Assembly (no actuator)		1							
Inlet Guide Vanes: Actuator Assembly with Positioner & Limit Switches		1							
Fan Coupling: complete with hubs and spacer	Flender	1							
BOILER									
Gasket, gauge glass, neoprene	853-00115	6							
Washer/gland, brass, gauge glass valve	798-00007	4							
Electrode/probe holder, warrick, lower water	873-00151	2							
Fuse, cartridge, 2.5A, 600V	832-01805	2							
Fuse, cartridge, 5.6A, 600V	832-01917	2							
Contactora, 3 pole, 600V, 40A	833-02196	1							
Relay, SPDT, 115VAC Coil	833-03060	3							
Control, pressure, 0-15 psi, on/off	817-03186	1							
Fuse, Cartridge, 60A, 600V	832-01376	6							
Filter guard	NPN-997-10970	1							
3/4" NPT Solenoid VLV, 2-way, N.C.	NPN-948-00481	1							
Element Assembly, 480V, 100kW	NPN-997-10779	1							
Element Assembly, 480V, 120kW	NPN-997-10780	1							
Fuse, Cartridge, 6.0A, 600V	NPN-832-01833	1							
Fuse, Fast-Acting, Bolt Mount, Bussman	NPN-832-02497	2							

Relay, Low Level, Warrick Series 26B1B	833-03563	1							
Relay, Ground Fault, Instantaneous	817-04343	1							
Pilot Light w/o Color Cap	881-00231	4							
5/8" x 10/34" gauge glass	851-00044	2							