



River monitoring using the Multi 3430 Digital Multiparameter Meter with FDO, conductivity, and pH sensors.

## APPENDIX. RESOURCES, INDEX, AND ORDER FORM

*Mission, Calculations, Contacts, Product Index, Topic Index, Ordering*

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### Ordering Information

We aim to provide you with the finest water instrumentation at a reasonable price. Our products are always fully supported and 100% guaranteed (our warranty information is on page 142).

Our goal is to help you find the best resources for your application and to offer you any support you may need. To discuss your application's requirements, receive a quote, or place an order, please contact us by phone, fax, mail, e-mail, or via our online information request form. A form to help you place your order can be found at the end of this book.

#### Contact Us

- **Phone:** (800) 874-1170 or (916) 638-3429. (Our business hours are from 7:00 a.m. to 3:30 p.m., Pacific Time, Monday through Friday.)
- **Fax:** (916) 638-3268
- **Mail:** 11390 Amalgam Way, Gold River, CA, 95650, U.S.A.
- **E-mail:** [globalw@globalw.com](mailto:globalw@globalw.com)
- **Website:** [www.globalw.com](http://www.globalw.com)  
(Fill out our online contact form, and we will contact you!)

#### Terms

Please specify ranges and total cable lengths for all orders. Prices are U.S. dollars, F.O.B. Gold River, CA.

- **U.S. and Canada:** Net 30 on approved credit, COD, Check in Advance, Credit Card (VISA or MasterCard), ACH, or EFT.
- **International:** Wire Transfer, Check in Advance, Credit Card. Note: Additional fees may apply. Check and credit card orders may be delayed up to three weeks for bank processing.



## About Us

### Who We Are, Our Mission, and Our Warranty

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#### Who We Are

Global Water is a manufacturer, distributor, and systems integrator of water instrumentation serving the water, wastewater, and environmental markets. We design and manufacture our own products, distribute products manufactured by other companies, and integrate products into systems to meet our customer's requirements. We have a customer service orientation that is supported by our well trained technical sales specialists and service technicians. Our web catalog ([www.globalw.com](http://www.globalw.com)) was one of the first in the water monitoring industry, and we continuously expand the site to include significant product and technical support information.

Global Water was founded in 1990 and has been improving its ability to meet its customers needs ever since. We are currently housed in a 17,000 square foot manufacturing facility in an industrial area near Sacramento, California. In August of 2007 Global Water was acquired by Nova Analytics. Nova Analytics Corporation is a worldwide supplier and integrator of electrochemistry products. Nova's industry experienced management offers extensive knowledge in all aspects of analytical markets which includes design, development, manufacturing and integration of laboratory products and services.

#### Our Mission

Our mission is to supply reliable and cost effective instrumentation solutions and to provide exceptional technical support. Our specific objectives are to:

- Serve the engineers, scientists, and operators of our industry by providing reliable and cost effective instrumentation solutions that meet their needs.
- Aggressively, and to the best of our abilities, provide exceptional customer service and technical support.
- Strive to exceed the expectations of our customers.
- Operate with utmost integrity in all our dealings with customers, vendors, distributors, and employees.

#### Our Warranty

GWI warrants that GWI products will, in all material respects, be free from defects in material and workmanship and will conform to the product specifications stated in the user documentation accompanying the product, when used in accordance with, and for the period stated in, such user documentation.

The duration of the warranty period applicable to GWI products can differ. In the event a warranty claim is made within the applicable warranty period, GWI, in its sole discretion, will either repair or replace the product found to be defective, in accordance with customary warranty repair policies.

The warranties stated herein do not apply to GWI products that do not perform as described in the instructional documentation due to causes other than normal use, such as, but not limited to accident, fault or negligence, operator error or misuse, or causes external to the products, including, but not limited to, electrical failure, fire or water damage, or exposure to intense heat or cold. GWI may require, in its sole discretion, that the warranted product be made available at GWI's location, at the Buyer's expense, for inspection.

# Monitoring Calculations

## Water Formulas, Conversions, and Abbreviations

### Formulas

Amps = Volts/Ohms

Area of Circle =  $(\pi/4)$  (Diameter<sup>2</sup>) or  $(\pi)$ (Radius<sup>2</sup>)

Area of Cone (lateral area) =  $[(\pi) (\text{Radius}) + \sqrt{\text{Radius}^2 + \text{Height}^2}] + [\pi \text{Radius}^2]$

Area of Cone (total surface area) =  $(\pi) (\text{Radius}) + \sqrt{\text{Radius}^2 + \text{Height}^2}$

Area of Cylinder (total outside surface area) = [Surface Area of End #1] + [Surface Area of End #2] +  $(\pi)$ (Diameter)(Height or Depth)

Area of Rectangle = (Length) (Width)

Area of a Right Triangle =  $\frac{(\text{Base}) (\text{Height})}{2}$

Chemical Feed Pump Setting, % Stroke =  $\frac{(\text{Desired Flow}) (100\%)}{\text{Maximum Flow}}$

Chemical Feed Pump Setting, ml/min =  $\frac{(\text{Flow, MGD}) (\text{Dose, mg/l}) (3.775 \text{ l/gal}) (1,000,000 \text{ gal/MG})}{(\text{Liquid, mg/ml}) (24 \text{ hr/day}) (60 \text{ min/hr})}$

Circumference of Circle =  $(\pi)$  (Diameter)

Composite Sample Single Portion =  $\frac{(\text{Number of Portions}) (\text{Total Sample Volume})}{(\text{Instantaneous Flow}) (\text{Average Flow})}$

Degrees Celsius =  $(\text{Degrees Fahrenheit} - 32) (5/9)$  or  $\frac{(^{\circ}\text{F}-32)}{1.8}$

Detention Time =  $\frac{\text{Volume}}{\text{Flow}}$

Electromotive Force (E.M.F), volts = (Current, amps) (Resistance, ohms) or  $E = IR$

Feed Rate, lbs/day =  $\frac{(\text{Dosage, mg/l}) (\text{Capacity, MGD}) (8.34 \text{ lbs/gal})}{(\text{Purity, decimal percentage})}$

Feed Rate, gal/min (Flouride Saturator) =  $\frac{(\text{Plant capacity, gal/min}) (\text{Dosage, mg/l})}{(18,000 \text{ mg/l})}$

Filter Backwash Rise Rate, in/min =  $\frac{(\text{Backwash Rate, GPM/sq ft}) (12 \text{ in/ft})}{(7.48 \text{ gal/cu ft})}$

Filter Drop Test Velocity, ft/min =  $\frac{\text{Water Drop, ft}}{\text{Time of Drop, min}}$

Filter Flow Rate or Backwash Rate, gpm/sq ft =  $\frac{\text{Flow, gpm}}{\text{Filter Area, sq ft}}$

Filter Yield, lbs/hr/sq ft =  $\frac{(\text{Solids Loading, lbs/day}) (\text{Recovery, \% / 100\%})}{(\text{Filter operation, hr/day}) (\text{Area, sq ft})}$

Flow Rate, cfs = (Area, sq ft)(Velocity, ft/sec) or

$Q = AV$  where: Q = flow rate, A = area, V= velocity

Force, pounds = (Pressure, psi) (Area, sq in)



Global Water does not guarantee the validity of this information.

## Appendix :: Monitoring Calculations



$$\text{Gallons/Capita/Day} = \frac{\text{Volume of Water Produced, gpd}}{\text{Population}}$$

$$\text{Hardness, as mg CaCO}_3/\text{l} = \frac{(\text{Titrant Volume, ml}) (1,000)}{\text{Sample Volume, ml}} \quad \text{Only when the titration factor is 1.00 of EDTA}$$

$$\text{Horsepower, Brake (bhp)} = \frac{(\text{Flow, gpm}) (\text{Head, ft})}{(3,960) (\text{Decimal Pump Efficiency})}$$

$$\text{Horsepower, Motor (mhp)} = \frac{(\text{Flow, gpm}) (\text{Head, ft})}{(3,960) (\text{Decimal Pump Efficiency}) (\text{Decimal Motor Efficiency})}$$

$$\text{Horsepower, Water (whp)} = \frac{(\text{Flow, gpm}) (\text{Head, ft})}{3,960}$$

$$\text{Hydraulic Loading Rate} = \frac{\text{Total Flow Applied}}{\text{Area}}$$

$$\text{Hypochlorite Strength, \%} = \frac{(\text{Hypochlorite Solution Needed, gal}) (8.34 \text{ lbs/gal})}{(\text{Chlorine Required, lbs}) (100)}$$

$$\text{Leakage, gpd} = \frac{\text{Volume, gallons}}{\text{Time, days}}$$

$$\text{Molarity} = \frac{\text{Moles of Solute}}{\text{Liters of Solution}}$$

$$\text{Nernst Equation} = E = E^0 - \frac{RT}{nF} \ln \frac{a_{\text{Red}}}{a_{\text{Ox}}}$$

$$\text{For a solution at room temperature, } 25^\circ\text{C} = E = E^0 - \frac{0.0591}{n} \log \frac{[\text{Red}]}{[\text{Ox}]} \quad (\text{or } 0.025659 \text{ using } \ln)$$

For a cell membrane potential with respect to one positive ion - cation (for a negative ion (anion) the sign before the logarithm is changed to

$$\text{a minus} = E = E^0 + \frac{0.0591}{n} \log \frac{[\text{ion out of cell}]}{[\text{ion inside cell}]}$$

$$\text{where } E = E^0 - \frac{RT}{nF} \ln \frac{a_{\text{Red}}}{a_{\text{Ox}}}$$

R is the universal gas constant, equal to  $8.314510 \text{ J K}^{-1} \text{ mol}^{-1}$ ; T is the temperature in kelvins (Kelvins =  $273.15 + ^\circ\text{C}$ .); a the chemical activities on the reduced and oxidized side, respectively; F is the Faraday constant (the charge per a mole of electrons), equal to  $9.6385309 \times 10^4 \text{ C mol}^{-1}$ ; n is the number of electrons transferred in the half-reaction; [Red] is the concentration of oxidizing agent (the reduced species); [Ox] is the concentration of reducing agent (the oxidized species);  $E^0$  is the formal electrode potential; y is the activity coefficient

$$\text{Normality} = \frac{\text{Number of Equivalent Weights of Solute}}{\text{Liters of Solution}}$$

$$\text{Number of Equivalent Weights} = \frac{\text{Total Weight}}{\text{Equivalent Weight}}$$

$$\text{Reduction in Flow, \%} = \frac{(\text{Original Flow} - \text{Reduced Flow}) (100\%)}{\text{Original Flow}}$$

$$\text{Removal, \%} = \frac{(\text{In} - \text{Out}) (100)}{\text{In}}$$

$$\text{Slope, \%} = \frac{\text{Drop or Rise}}{\text{Distance}} \times 100$$

$$\text{Solids, mg/l} = \frac{(\text{Dry Solids, grams}) (1,000,000)}{\text{Sample Volume, ml}}$$

Global Water does not guarantee the validity of this information.

$$\text{Solids Concentration, mg/l} = \frac{\text{Weight, mg}}{\text{Volume, l}}$$

$$\text{Specific Gravity} = \frac{\text{Specific Weight of Substance, lbs/gal}}{\text{Specific Weight of Water, lbs/gal}}$$

$$\text{Surface Loading Rate, gpd/sq ft} = \frac{\text{Flow, gpd}}{\text{Area, sq ft}}$$

$$\text{Volume of Cone} = (1/3) (\pi/4) (\text{Diameter}^2) (\text{Height})$$

$$\text{Volume of Cylinder} = (\pi/4) (\text{Diameter}^2) (\text{Height})$$

$$\text{Volume of Rectangular Tank} = (\text{Length}) (\text{Width}) (\text{Height})$$

Water Hardness =

Soft: 0 - 20 mg/l as calcium

Moderately soft: 20 - 40 mg/l as calcium

Slightly hard: 40 - 60 mg/l as calcium

Moderately hard: 60 - 80 mg/l as calcium

Hard: 80 - 120 mg/l as calcium

Very Hard: >120 mg/l as calcium

$$\text{Watts (AC circuit)} = (\text{Volts}) (\text{Amps}) (\text{Power Factor})$$

$$\text{Weir Overflow Rate, gpd/ft} = \frac{\text{Flow, gpd}}{\text{Weir Length, ft}}$$

### Alkalinity Relationships

| Result of Titration | Alkalinity, mg/l as CaCO <sub>3</sub>     |   |  |
|---------------------|---|---|--|
|                     | Hydroxide Alkalinity as CaCO <sub>3</sub> | Carbonate Alkalinity as CaCO <sub>3</sub> | Bicarbonate Concentration as CaCO <sub>3</sub> |
| P=0                 | 0   | 0   | T  |
| P<½T                | 0   | 2P  | T-2P   |
| P=½T                | 0   | 2P  | 0  |
| P>½T                | 2P-T                                      | 2(T-P)                                    | 0  |
| P=T                 | T   | 0   | 0  |

P: phenolphthalein alkalinity; T: total alkalinity

### Conversions

1 acre = 43,560 square feet

1 acre foot = 326,000 gallons

1 cubic foot = 7.48 gallons

1 cubic foot = 62.4 pounds

1 cubic foot per second = 0.636 MGD

1 foot = 0.305 meters

1 foot of water = 0.433 psi

1 gallon = 3.79 liters

1 gallon of water = 8.34 pounds

1 grain per gallon = 17.1 mg/L

1 horsepower = 0.726 kW or 726 watts or 33,000 ft. lbs./min.

1 million gallons per day = 672 gallons per minute

1 million gallons per day = 1.55 cubic feet per second

1 mile = 5,280 feet

1 pound = 0.454 kilograms

1 pound per square inch = 2.31 feet of water

1% = 10,000 mg/L

π or pi = 3.14

1 dGH = 10 mg/l CaO = 7.14 mg/l Ca<sup>2+</sup> = 17.86 mg/l CaCO<sub>3</sub> = 0.18 mmol/l earth alkaline ions (1 dGH = 17.86 ppm American hardness = 1.25°English hardness = 1.77°French hardness)



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## Resource Contacts

### Sources for Water-Related Information

#### Federal Agencies

The following U.S. Government websites contain water-related information.

- FirstGov: <http://www.nemi.gov/>
- Federal Emergency Management Agency (FEMA): <http://www.fema.gov/>
- National Oceanic and Atmospheric Administration: <http://www.noaa.gov/>
- National Weather Service– Hydrologic Information Center: <http://www.weather.gov/ahps/hic/index.php/index/>
- National Weather Service– Office of Hydrologic Development: <http://www.weather.gov/oh/>
- National Weather Service– Office of Climate, Water, and Weather Services: <http://www.weather.gov/om/>
- National Climatic Data Center: <http://www.ncdc.noaa.gov/oa/ncdc.html>
- National Operational Hydrologic Remote Sensing Center: <http://www.nohrsc.nws.gov/>
- NASA - Earth Observing System: <http://eosps.gsfc.nasa.gov/>
- United States Chemical Safety and Hazard Investigation Board: <http://www.chemsafety.gov/>
- U.S. Army Corps of Engineers: <http://www.usace.army.mil/>
- U.S. Department of Agriculture: <http://www.usda.gov/>
- Natural Resources Conservation Service: <http://www.nrcs.usda.gov/>
- U.S. Department of the Interior: <http://www.doi.gov/>
- Bureau of Indian Affairs: <http://www.doi.gov/bia/>
- Bureau of Land Management: <http://www.blm.gov/nhp/index.htm>
- Bureau of Reclamation: <http://www.usbr.gov/>
- Minerals Management Service: <http://www.mms.gov/>
- National Park Service: <http://www.nps.gov/>
- Office of Surface Mining: <http://www.osmre.gov/>
- U.S. Fish and Wildlife Service: <http://www.fws.gov/>
- U.S. Geological Survey: <http://www.usgs.gov/>
- U.S. Environmental Protection Agency: <http://www.epa.gov/>
- EPA Office of Water: <http://www.epa.gov/ow/index.html>
- EPA Surf Your Watershed: <http://cfpub.epa.gov/surf/locate/index.cfm>
- EPA Window to My Environment: <http://www.epa.gov/myenvironment/>
- EPA Envirofacts Data Warehouse: <http://www.epa.gov/enviro/>
- EPA Software for Environmental Awareness: <http://www.epa.gov/seahome/>
- U.S. Water Monitor: <http://watermonitor.gov/>

Global Water does not guarantee the validity of this information.

- White House: <http://www.whitehouse.gov/>

#### State Agencies

The following state agencies address water resources:

- Alabama Department of Environmental Management Water Division: <http://www.adem.state.al.us/WaterDivision/WaterDivisionPP.htm>
- Alaska Department of Environmental Conservation: <http://www.dec.state.ak.us/water/index.htm>
- Arizona Department of Environmental Quality: <http://www.azdeq.gov/>
- Arkansas Department of Pollution Control and Ecology: <http://www.adeq.state.ar.us/>
- California Department of Water Resources: <http://www.water.ca.gov/>
- Colorado Department of Public Health and Environment: <http://www.cdph.state.co.us/wq/index.html>
- Connecticut Bureau of Water Management: <http://www.ct.gov/dep/site/default.asp>
- Delaware Division of Water Resources: <http://www.wr.dnrec.delaware.gov/Pages/Default.aspx>
- Florida Division of Water Resource Management: <http://www.dep.state.fl.us/water/>
- Georgia Department of Environmental Protection: <http://www.gaepd.org/>
- Hawaii Department of Health: <http://hawaii.gov/health/>
- Idaho Division of Environmental Quality: <http://www.deq.state.id.us/>
- Illinois Environmental Protection Agency, Bureau of Water: <http://www.epa.state.il.us/water/index.html>
- Indiana Department of Environmental Management: <http://ai.org/idem/>
- Iowa Department of Natural Resources: <http://www.iowadnr.gov/>
- Kansas Department of Health and Environment: <http://www.kdheks.gov/water/>
- Kentucky Division of Water: <http://www.water.ky.gov/>
- Louisiana Department of Environmental Quality: <http://www.deq.louisiana.gov/portal/>
- Maine Bureau of Land & Water Quality: <http://www.state.me.us/dep/blwq/>
- Maryland Department of the Environment: <http://www.mde.state.md.us/>
- Massachusetts Bureau of Resource Protection: <http://www.mass.gov/dep/>
- Michigan Department of Environmental Quality: <http://www.michigan.gov/deq>
- Minnesota Pollution Control Agency: <http://www.pca.state.mn.us/water/>
- Mississippi Department of Environmental Quality: [http://www.deq.state.ms.us/MDEQ.nsf/page/Main\\_Home?OpenDocument](http://www.deq.state.ms.us/MDEQ.nsf/page/Main_Home?OpenDocument)
- Missouri Department of Natural Resources:

<http://www.dnr.state.mo.us/>

- Montana Department of Natural Resources and Conservation: <http://www.dnrc.mt.gov/>
- Nebraska Department of Environmental Quality: <http://www.deq.state.ne.us/>
- Nevada Department of Conservation and Natural Resources: <http://www.dcnr.nv.gov/>
- New Jersey Division of Water Quality: <http://www.state.nj.us/dep/dwq/>
- New Hampshire DES Water Resources & Quality Division: [http://www.des.state.nh.us/water\\_intro.htm](http://www.des.state.nh.us/water_intro.htm)
- New Mexico Environmental Department: <http://www.nmenv.state.nm.us/>
- New York Department of Environmental Conservation: <http://www.dec.ny.gov/>
- North Carolina Department of Environment and Natural Resources: <http://www.enr.state.nc.us/>
- North Dakota Department of Health: <http://www.ndhealth.gov/EHS/>
- Ohio Environmental Protection Agency: <http://www.epa.state.oh.us/>
- Oklahoma Department of Environmental Quality: <http://www.deq.state.ok.us>
- Oregon Department of Environmental Quality: <http://www.oregon.gov/DEQ/>
- Pennsylvania Office of Water Management: <http://www.depweb.state.pa.us/watermgmt/site/default.asp?watersupplyNav=1>
- Rhode Island Office of Drinking Water Quality: <http://www.healthri.org/environment/dwq/Home.htm>
- South Carolina Department of Natural Resources: <http://www.dnr.sc.gov/>
- South Dakota Department of Environment and Natural Resources: <http://denr.sd.gov/>
- Tennessee Department of Environment and Conservation: <http://www.tn.gov/environment/>
- Texas Commission on Environmental Quality: <http://www.tceq.state.tx.us/>
- Utah Department of Environmental Quality: <http://www.deq.utah.gov/>
- Vermont Agency of Natural Resources: <http://www.anr.state.vt.us/>
- Virginia Department of Environmental Quality, Water Program: <http://www.deq.state.va.us/water>
- Washington Department of Ecology: <http://www.ecy.wa.gov/programs/wq/wqhome.html>
- West Virginia Division of Water and Waste Management: <http://www.wvdep.org/item.cfm?ssid=11>
- Wisconsin Department of Natural Resources: <http://www.dnr.state.wi.us/environment/protect/water.html>
- Wyoming Department of Environmental Quality: <http://deq.state.wy.us/>

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## Terms and Conditions of Sale or Quotation

### General

The sale of product(s) by Global Water Instrumentation ("GWI") shall be governed by these terms and conditions. GWI's offer to sell products to you ("Customer") is expressly limited by Customer's acceptance of these terms and conditions, as evidenced by Customer's issuance of a purchase order for product(s), or Customer's acceptance of any product under the purchase order, or Customer's payment for any product under the purchase order. Additional or different terms or conditions proposed by a Customer (including those that may be contained in Customer's purchase order) shall be void and of no effect unless a written agreement to the contrary is provided by GWI.

### Certain Limits of GWI's Obligation

Customer's order for product(s) is binding only when accepted by an authorized representative of GWI, and is accepted subject to the terms and conditions contained herein, which constitute the complete agreement between the parties. Except as set forth herein, there are no other agreements between GWI and the Customer, oral or written, with respect to the products sold by GWI (including any made or implied from past dealings). Trade custom, trade usage and past performance are hereby superseded and shall not be used to interpret these terms and conditions.

### Product Specifications

The technical specifications provided in GWI's catalog, literature, or in any written quotations are intended to be accurate. However, in a continuing effort to improve our products, GLOBAL WATER INSTRUMENTATION reserves the right to make technical changes to products at any time during the period between the acceptance of the Customer's order and delivery; provided that such changes will not reduce the performance of the products sold. The technical documentation included with GWI's offer and/or delivery, such as illustrations, drawings, indication of weight, etc. will only be binding upon GWI where expressly stated.

### Confidentiality

Cost estimates, technical literature, drawings and other details provided to Customer by GWI may contain data that embody trade secrets and confidential know-how of commercial value to GWI. Customer shall keep such information confidential, not disclose such information to any other person or entity, not use such information except in connection with the products supplied hereunder; and not sell, lease, loan or permit any other person or entity to use such information for any purpose, without GWI's prior written consent. Nothing herein shall restrict the use of information available to the general public.

### Price

Products shall be sold and invoiced at prices established by written contract between the parties, and, in the absence of a written contract, as quoted by GWI (provided Customer has issued a purchase order which has been accepted by GWI prior to the expiration date of the quotation). The agreed prices are linked to type and quantity of product(s), and may therefore change if the Customer desires to amend his or its order. In the event of cost increases pertaining to material and/or manufacturing of products during the period between acceptance of an order and delivery, GWI reserves the right to increase the sales price accordingly.

### Payment Terms

Payment Terms are set forth in the GWI Sales Order or Quotation. If payment is not received in accordance with the Payment Terms, Customer will be required to pay interest at the rate of 18% per annum. If a check, draft or credit card payment is returned or rejected at any time, the Customer agrees to pay GWI a \$50.00 handling charge plus any associated bank fees or charges, related to the returned or rejected amount. GWI reserves the right to refuse payment by check, credit card, draft or wire transfer and may institute C.O.D. or cash-in-advance payment terms at any time. Customer will be responsible for collection costs, including attorneys' fees should Customer fail to meet the obligations of the Payment Terms.

### Cancellation

GWI sells certain items which are non-cancellable and non-returnable. If Customer purchases any item which is non-cancellable and non-returnable, GWI shall indicate on the Sales Order or Quotation that the item(s) is non-cancellable and non-returnable. For purchases which are cancellable, valid cancellations may be subject to a cancellation charge of up to 15% of net price of the Customer's order. Cancellations will be valid provided that GWI receives written notice of such cancellation from the Customer a minimum of 30 days prior to the shipment date. Customer understands that any cancellation that does not meet the terms of this paragraph will be considered invalid and the Customer will be required to fulfill the Payment Terms.

### Default

If the Customer fails to carry out any of the terms as set forth in GWI's Sales Order, Quotation, or these Terms and Conditions, files for bankruptcy protection, goes into receivership, or makes an assignment for the benefit of creditors, then: (i) all monies due GWI from the Customer shall become immediately due and payable; (ii) GWI may cancel all pending accepted orders without prejudice to any of GWI's other rights or remedies existing at the time of cancellation; (iii) GWI may resell any goods previously agreed to be supplied or held for the Customer; and (iv) GWI may postpone any shipments, even if in transit. In such event, the Customer shall pay GWI for any loss, damages, costs, and attorneys' fees arising from the Customer's default, including costs of collection and suit.

### Product Shipment Terms

All products are sold F.O.B. point of shipment, GWI location, unless otherwise specified in writing by GWI. All charges, expenses, fees, duties, taxes, expedite fee(s), and insurance related to the packing or transporting of products to Customer's designated site are charged to Customer. Risk of loss and title shall pass to Customer as soon as the products have been placed with a transport agent. The equipment will be insured for transit only at Customer's specific request, with corresponding costs being charged to Customer. Unless specified by the Customer, GWI will select the means of shipping and routing which it deems appropriate. Although reasonable efforts will be made, no assurance can be given that GWI will select the most reliable or economical method of transportation, and we expressly disclaim responsibility thereof.

### Minimum Order Requirements

GWI requires a minimum dealer product order of \$50.00 for domestic dealers and \$100.00 for international dealers. An "order" is considered to be a purchase order for products to be shipped to a single location.

### Drop Shipments

Upon Customer's request, standard drop shipment orders will be shipped to Customer's end-user, subject to stock availability. For faster processing, see "Expedite Orders" below.

### Expedite Orders

There is a \$60.00 surcharge for orders requesting same day shipment provided GWI receives the order by 1:00PM PDT and "subject to stock availability".

### Restocking Charges

Prior approval must be obtained from GWI to return any product. (See contact information listed below under "To Return Goods.") Only new (in-the-box) goods may be returned, and only within 30 days of shipment by GWI, for full credit. A 35% restocking charge will apply to any product returned beyond 30 days. Products may not be returned or exchanged after six months of first receipt. GWI will determine if the product is in acceptable condition for return. Older items, service parts, and discontinued items cannot be returned.

### Short Shipments

GWI must be notified within 30 days of receipt of invoice of any item or billing discrepancies. A credit memo will be issued to remedy all substantiated claims of short shipments and a new order placed for the missing products. Any shipment discrepancy claimed after 30 days of invoice date will not be honored and GWI will not issue credit.

### Notice of Defects

The Customer is required to examine the product(s) delivered immediately upon receipt thereof and to report to GWI in writing any visible defects within 10 working days of receipt. Defects that are not visible must be reported to GWI in writing within 10 days after discovery of such defect. Failure to report defects strictly within the time periods previously stated will be deemed an unqualified waiver of any and all rights to warranty claims.

### To Return Goods

Prior approval must be obtained from GWI to return any product. Contact GWI, at the number listed below, within 30 days of receipt of goods for a return authorization number ("RMA"). No returns will be permitted after this 30-day period, unless otherwise authorized by GWI. All returns are to be shipped freight prepaid with the RMA number clearly marked on the outside of the shipping box and included inside the box.

GLOBAL WATER INSTRUMENTATION, INC.

Toll Free: 800-874-1170; Tel: 916-638-3429; Fax: 916-638-3268

Email: TechnicalSupport@globalw.com

Please refer to our contact page for the mailing address.

## Terms and Conditions of Sale or Quotation

GWI will not accept returns for consumable products that have been opened including, but not limited to, solutions, buffers, standards, filling solutions, accessories, power cords and interface cables. Customers are advised to contact GWI's Customer service with any questions.

### Product Use

GWI offers a wide variety of products with a wide variety of uses. The well-being of individuals using these products is dependent on the proper operation and maintenance of the products, as well as safe laboratory and field practice. Please refer to the owner's guide and user documentation for details regarding the proper use and operation of our products.

### Software

With respect to any software incorporated in or forming a part of the products sold hereunder, GWI and the Customer intend and agree that such software is being licensed and not sold, and that the words "purchase", "sell", or similar or derivative words are understood and agreed to mean "license," and that the word "Customer" or similar or derivative words are understood and agreed to mean "licensee." Notwithstanding anything to the contrary contained herein, GWI or its licensor, as the case may be, retains all rights and interest in software products provided hereunder. GWI hereby grants to Customer a royalty-free, non-exclusive, nontransferable license, without power to sublicense, to use software provided hereunder solely for Customer's own internal business purposes on the hardware products provided hereunder and to use the related documentation solely for Customer's own business purposes. This license terminates when Customer's lawful possession of the hardware products provided hereunder (and with respect to which such software is intended to be used) cease, unless earlier termination as provided herein. Absent GWI's written request, Customer agrees to hold in confidence and not to sell, transfer, license, loan or otherwise make available in any form to third parties the software products and related documentation provided hereunder. Customer may not disassemble, decompile, reverse engineer, copy, modify, enhance or otherwise change or supplement the software products provided hereunder without GWI's prior written consent. GWI will be entitled to terminate this license if Customer fails to comply with any terms or conditions herein. Customer agrees, upon termination of this license, immediately to return to GWI all software products and related documentation provided hereunder and all copies and portions thereof.

Certain of the software products provided by GWI may be owned by one or more third parties and licensed to GWI. Accordingly, GWI and Customer agree that such third parties retain ownership of and title to such software products. The warranty provisions set forth herein shall not apply to software products owned by third parties and provided hereunder.

### Export Restrictions

Customer acknowledges that each of our products and any related software and technology, including technical information supplied by GWI or contained in documents (collectively "Items"), is subject to export controls of the U.S. government. The export controls may include, but are not limited to, those of the Export Administration Regulations of the U.S. Department of Commerce (the "EAR"), which may restrict or require licenses for the export of Items from the United States and their re-export from other countries. Customer shall comply with the EAR and all other applicable laws, regulations, laws, treaties, and agreements relating to the export, re-export, and import of any Item. Customer shall not, without first obtaining the required license to do so from the appropriate U.S. government agency; (i) export or re-export any Item, or (ii) export, re-export, distribute or supply any Item to any restricted or embargoed country or to a person or entity whose privilege to participate in exports had been denied or restricted by the U.S. government. Customer shall cooperate fully with GWI in any official or unofficial audit or inspection related to applicable export or import control laws or regulations, and shall indemnify and hold GWI harmless from, or in connection with, any violation of this Section by Customer or its employees, consultants, agents, or Customers.

### Hazardous Materials

Some materials are designated corrosive and/or oxidizer and/or hazardous by DOT and IATA. Some GWI materials may require special labeling and handling. Carriers may add additional freight charges for handling/transporting these materials. Consolidating such material with other products may be prohibited. Additional freight charges will be billed per the GWI shipping terms. Be sure to advise GWI of shipping instructions for these hazardous materials to reduce freight costs and any potential delays in shipping.

### Force Majeure

GWI shall not be liable for failure to perform or for delay in performance due to fire, flood, strike, or other labor difficulty, act of God, act of any governmental authority, riot, embargo, fuel or energy shortage, wrecks or delays in transportation, inability to obtain necessary labor, materials, or manufacturing facilities from usual sources, or due to any cause beyond GWI's reasonable control. In the event of a delay in performance due to any such cause, the date of delivery or time for completion of performance will be extended by a period of time reasonably necessary to overcome the effect of such delay.

### Warranty

GWI warrants that GWI products will, in all material respects, be free from defects in material and workmanship and will conform to the product specifications stated in the user documentation accompanying the product, when used in accordance with, and for the period stated in, such user documentation.

The duration of the warranty period applicable to GWI products can differ. In the event a warranty claim is made within the applicable warranty period, GWI, in its sole discretion, will either repair or replace the product found to be defective, in accordance with customary warranty repair policies.

The warranties stated herein do not apply to GWI products that do not perform as described in the instructional documentation due to causes other than normal use, such as, but not limited to accident, fault or negligence, operator error or misuse, or causes external to the products, including, but not limited to, electrical failure, fire or water damage, or exposure to intense heat or cold. GWI may require, in its sole discretion, that the warranted product be made available at GWI's location, at the Buyer's expense, for inspection.

THE FOREGOING EXPRESS WARRANTIES ARE THE EXCLUSIVE TERMS AVAILABLE TO CUSTOMER AND TO ANY OTHER PERSON OR ENTITY TO WHOM GWI PRODUCTS ARE TRANSFERRED DURING THE WARRANTY PERIOD. THE CORRECTION OF ANY DEFECT IN OR FAILURE OF PRODUCTS BY REPAIR OR REPLACEMENT IN ACCORDANCE WITH GWI'S POLICIES SHALL BE GWI'S LIMIT OF LIABILITY AND THE EXCLUSIVE REMEDY FOR ANY AND ALL LOSSES, DELAYS OR DAMAGES RESULTING FROM THE PURCHASE OR USE OF GWI PRODUCTS. OTHER THAN THE WARRANTIES SPECIFICALLY STATED HEREIN, GWI DISCLAIMS ALL WARRANTIES WITH RESPECT TO THE GWI PRODUCTS, EITHER EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY ARISING FROM A COURSE OF DEALING OR USAGE OF TRADE, AND ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

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### Limitation of Liability

THE LIABILITY OF GWI WITH RESPECT TO ANY GWI PRODUCTS SOLD HEREUNDER SHALL BE LIMITED TO THE ACTUAL AMOUNT PAID BY THE CUSTOMER FOR SUCH GWI PRODUCT(S), AND IN NO EVENT SHALL SUCH DAMAGES INCLUDE, AND GWI SHALL NOT BE LIABLE FOR, ANY INCIDENTAL, INDIRECT, CONSEQUENTIAL, EXEMPLARY, OR SPECIAL DAMAGES OF ANY KIND, INCLUDING, WITHOUT LIMITATION, LOSS OF PROFIT, PROMOTIONAL OR MANUFACTURING EXPENSES, BUSINESS INTERRUPTION COSTS, LOSS OF DATA, INJURY TO REPUTATION OR LOSS OF CUSTOMERS, EVEN IF GWI HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, AND IRRESPECTIVE OF THE NATURE OF THE CLAIM WHETHER IN CONTRACT, TORT, WARRANTY, OR OTHERWISE.

### Waiver

The failure of GWI to require the performance of any term or obligation of this Agreement, or the waiver by GWI of any breach of this Agreement, in any particular case will not prevent any subsequent enforcement of such term or obligation to be deemed a waiver of any separate or subsequent breach.

### Governing Law

These product terms and conditions is governed and construed in accordance with the laws of the State of California U.S.A. without regard to conflicts of laws principles. Any legal action or proceeding related in any way to this Terms of Use Agreement or our Website shall be brought exclusively in the courts of Sacramento, California.

### Validity Of Provisions

In the event any provision or portion of any provision of these terms and conditions shall be held invalid, void or otherwise unenforceable, such holding shall not affect the remaining part or portions of that provision, or any other provision hereof.