#### **ITEM OPPORTUNITY SYNOPSIS**

	ry synopsis				
Scouting Number:	2024-182				
Name of the item to be scouted:	Nutrient Analyzer				
State item to be used in:	Florida				
Describe the Item:					
Please describe the item application/the end use of the item.				Nitrate, Nitrite and Orth-Phosphorus. A low detection level instrument that is designed for salt water analysis. Specific features listed below are required to reduce carryover and increase sample throughput, as well as to combat refractive index effects from saltwater samples. The instrument must offer full automation, allowing for complete unattended start up and shut down	
Supplier Information:					
Type of Supplier Being Sought (select from the list below):					
Manufacturer	X				
Contract Manufacturer					
Distributor					
Other (Please Specify)					
Reason for Scouting Submission (select from the list below)					
2nd Supplier	X				
Price Po Sharo					
Re-Shore Past supplier no longer available					
New Product Startup					
BABA					
Other (Please Specify)					
Summary of Technical Specifications and Performance Requirements:					
Describe the manufacturing processes (elaborate to provide as much detail as possible)	Assembly				
Provide dimensions / size / tolerances / performance specifications of the item	Standalone instrument using stainless steel and highly durable component due to a highly corrosive marine environment. Instrument includes: • Sampler: 17.5" W x 18.5" D x 30" H • AA500 System (Pump, Manifolds, and Detectors): 37.6" W x 13.8" D x 11.8" H • Sampler: 17.5" W x_11.8" W x 18.5" D x 5.9" H 18.5" D x 30" H • AA500 System (Pump, Manifolds, and Detectors): 37.6" W x 13.8" D x 11.8" H				
List required materials needed to make the product, including materials of product components, if applicable	stainless steel, teflon, plastic, aluminum, glass, cadmium (coil).				
Are there applicable certification requirements?					
Yes	X				
No					
Please explain:	ISO 9001				
Are there any applicable regulations that apply to the production of this item?					
Yes	x				
No					
Please explain:	Needs to be complaint with Clean Water Act regulations https://www.epa.gov/laws-regulations/summary-clean-water-act				
Are there any other standards / requirements?					
Yes					
No	X				
Please explain:					
NAICS CODES:					
NAICS 1	334516 Analytical laboratory instrument manufacturing				
NAICS 2					
Additional Comments:					

Additional technical comments:	A multi component system uses a flow through system to analyze nutrients and a cadmium coil for reduction of NOx to NO3. ISO9001 certified.			
Volume and Pricing:				
Estimated Potential Business Volume (i.e. #units per day, month, year): 1 (one)				
Estimated Target Price/Unit Cost Information:	\$63,860			
Delivery Requirements:				
When is it needed by? (Immediate, 30 days, 6 months, etc.)	60 days			
	Government scientific instrument purchase, FOB Unspecified, product must			
Describe packaging requirements (i.e. individually/group packaging, etc.)	be delivered undamaged.			
here will this item be shipped? US EPA/ORD/CEMM/GEMMD Gulf Breeze, FL 32561				
Additional Comments:				
	Instrument needed to replace old, failing nutrient analyzer. Contact			
	information for questions on BABA/Buy American compliance: Jessica			
Is there other information you would like to include?	Aukamp Aukamp.jessica@epa.gov			

# 1.3 EU Declaration of Conformity

		SEAL Analytical
	MITÄTSERKLÄR ATION OF CONF	
MANUFACTURER	SEAL Analytical ( Werkstr. 5 22844 Nordersted	
HIERMIT ERKLÄREN WIR, DASS GRUNDLEGENDEN ANFORDER		LGENDER AUSRÜSTUNG DEN
EMV RICHTLINIE NIEDERSPANNUNGSRICHTLINI RoHS RICHTLINIE	2014/30/EU E 2014/35/EU 2011/65/EU	DER UND DER ENTSPRICHT.
WE HEREBY DECLARE THAT TH CORRESPONDS WITH THE APP		
EMC DIRECTIVE LOW VOLTAGE DIRECTIVE RoHS DIRECTIVE	2014/30/EU 2014/35/EU 2011/65/EU	THE AND THE
AA500 System, 161+A000-00, 1 -	- 6 Channel.	
ANGEWENDETE HARMONISIER APPLIED HARMONIZED STAND/		EN 61010-1 2010 EN 55011 2018 EN 61326 2013 EN 61000-2 :2015 EN 61000-3 :2014 EN 12100 2010/1
UNTERSCHRIFT: B. FINK SIGNATURE: 31,461 2019		GTER ANALYZER DATUM: 30.07. ITATIVE ANALYZER DATE:
Für und im Auftrag von SEAL An	alytical GmbH F	or and on behalf of SEAL Analytical GmbH



Current issue date:	
Expiry date:	
Certificate identity number	:

11 May 2022 10 May 2025 10434242 Original approval(s): ISO 9001 - 11 May 2007 ISO 14001 - 5 December 2018

# **Certificate of Approval**

This is to certify that the Management System of:

# **SEAL Analytical GmbH**

Werkstraße 5, 22844 Norderstedt, Germany

has been approved by LRQA to the following standards:

# ISO 9001:2015, ISO 14001:2015

Approval number(s): ISO 9001 - 0026456, ISO 14001 - 0027072

#### The scope of this approval is applicable to:

Design, manufacture, sales and service of automated analyzers.

Paul Graaf

Area Operations Manager, Europe Issued by: LRQA Deutschland GmbH for and on behalf of: LRQA Limited



LRQA Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as 'LRQA'. LRQA assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant LRQA entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.

Issued by: LRQA Deutschland GmbH, Butzweilerhofallee 3, 50829 Köln, Germany for and on behalf of: LRQA Limited, 1 Trinity Park, Bickenhill Lane, Birmingham B37 7ES, United Kingdom

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#### SOW/Salient Characteristics:

Purchase of a nutrient analyzer to replace aged unit. The nutrient analyzer is a system used for analysis of major water quality parameters, including: Nitrite, Nitrate and Ortho-Phosphorus. The unit shall have advanced matrix correction technology in order to process a wide range of sample salinities. Market research indicates that the unit shall meet all GEMMD requirements for water quality from inland fresh water to Gulf of Mexico salt water.

Minimum requirements include:

#### **Instrumentation**

- All chemistries shall run air-segmented methods in 2.0 mm glass manifold components. This is to limit the risk of blockage.
- The system shall be assembled as a modular standalone, sampler, pump, chemistry unit and spectrophotometers for easy service replacement. The system shall also be capable of being single linked for easy transport between laboratory locations.
- Shall be compatible with alternate detectors such as flame photometer and fluorimeter.
- The detector shall be a true dual beam detection system with same-wavelength correction for high stability. Both sample and reference beam shall be from the same single channel specific LED light source and reach the detector at the same time, to enable real time referencing. The vendor shall provide pictures and documentation from the operator manual showing how the system does this.
- Each detector shall have its own LED light source which is automatically controlled by the software for intensity which will allow optimization for each method run on that channel. The vendor shall provide pictures and/or documentation from the operator manual showing the light source for each separate channel.
- For environmental concerns, heating, distillation and autoclave modules shall utilize direct solid state heating technology.
- The detection system for each channel, including flow cell, shall be individually enclosed and thermostatically controlled to ensure stable readings (results).
- The instrument shall be available with multi-test chemistry manifolds which make it possible to change from one method to another without any manual switching of manifolds or pump tubes. No glassware or pump tubes should need to be changed when switching between chemistries.
- Heating bath in chemistry manifold shall have high accuracy temperature control via software (better than +/- 0.1°C). Construction shall be solid state for easy user replacement of heating coil. Vendor shall state specification of temperature control in response documents.

• The pump, the colorimeter, heating baths and the manifold shall be protected with a leak detector which when activated stops the pump and therefore damage from leaking chemicals.

#### Matrix correction/Saltwater sampling

- The system shall **not** require debubbling before the flowcell. The bubble must pass through the flowcell and the software must utilize a software debubbling algorithm. This feature is required to reduce carryover and increase sample throughput, as well as to combat refractive index effects from saltwater samples. The vendor shall provide pictures and documentation from the operator manual showing how the system does this.
- The system shall utilize flowcells with planar geometry, allowing light to be focused through the flowcell and minimizing saltwater matrix effects.

#### **Automation**

- The pump platen shall be able to be automatically engaged (locked onto pump) from software to allow for unattended start-up of a run.
- The pump platen shall have software controlled automatic disengage (release from the pump tubes) to allow complete unattended shutdown of the system. This will also maximize pump tube lifetime.
- System shall have option for automatic electronic valve for isolation of cadmium reduction coil with visual LED indication of function.





# AA500

HIGH PERFORMANCE, HIGH AUTOMATION AUTOANALYZER

TAT

# $NO_3$ NH<sub>3</sub> NO<sub>2</sub> PO<sub>4</sub> TP Si TKN

AA500 – the world's best AutoAnalyzer has evolved. Now featuring full software control including automatic startup and complete automatic shutdown.



AA500 uses full automation and intelligent technologies to deliver high performance water and seawater analysis

## USEPA, ASTM, ISO, AOAC, DIN, CORESTA

and other international regulatory compliant methods are available.

#### **APPLICATIONS INCLUDE**

Drinking Water Water and Wastewater Seawater Soil and Plants Tobacco Wine

# HOW DOES THE AA500 WORK?

The AA500 is the next step in the evolution of the original world-class Technicon AutoAnalyzer. With compact, all-in-one housing, the system delivers up to six channels with total automation of startup and shutdown, as well as full digital control of digestion, distillation, and air injection. With a focus on maintaining the AutoAnalyzer's long standing reputation for high quality and reliability, the AA500 brings unequaled performance, flexibility and productivity enhancements to the laboratory.

The AA500 incorporates the same principles employed in a basic segmented flow analyzer (SFA) system, of an autosampler, a peristaltic pump, a chemistry manifold, a detector and data acquisition software. Sample and reagents are pumped continuously through the chemistry manifold. Air bubbles are introduced at regular intervals forming unique reaction segments which are mixed using glass coils. Glass is ideal as it is inert, stays clean and enables easy visual checks.

In SFA, reactions run to completion and the ratio of sample to reagents in the detector reaches a constant maximum value. This results in ultra-low detection limits and exceptional reproducibility. Variations in reaction time, temperature and sample matrix do not affect the results as they do in other colorimetric techniques, such as flow injection analysis, where the reaction is not brought to completion.

The AA500 is the top-of-the line AutoAnalyzer incorporating the latest innovations to deliver your laboratory the freedom of total automation while achieving very high precision and the lowest detections levels. It is the AutoAnalyzer you've been waiting for.

### AA500 FOR TOTAL AUTOMATION > PROGRAM AND LEAVE

The AA500 incorporates automation previously unseen in Continuous Segmented Flow Analyzers, with true automated startup, automated standards and dilution, and true automated shutdown. The computer controlled **automatic pump platen engage and release** with AACE intelligent software performs an automatic startup and shutdown. This includes turning on/off the pump, engaging/releasing the platen on/off the pump tubes, and a valve controlled reagent/wash program. With the AA500, you have an analyzer with total automation.

# ADVANTAGES AND BENEFITS

#### Set and Leave Operation

Auto startup, auto method changeover, and auto shutdown including valve/ reagent wash and automatic pump platen release

#### Modular & Compact

The all-in-one housing uses modular components to deliver a compact analyzer with more organization, more integration and more powerful control, all while using less bench space. System modules can be standalone or used to replace AA3 modules.

#### High Resolution Digital Photometer

The high resolution dual beam LED digital photometer delivers long life, low maintenance, and the lowest detection levels, even in extreme environments. Optional LED wavelength modules 250nm-880nm. Optional 10-50mm flow cells.

#### Total Automation

Full digital control of heating baths, distillation, digestion, air injection and reagents with automatic startup and shutdown delivers true set and leave operation.

#### High Performance Chemistry Module

The chemistry manifold uses an easy fix system to position precision glass components. Glass is chemically inert and enables quick, easy visual checks and cleaning. Distillation, gas diffusion, dialysis and UV digestion can also be incorporated. Optional multitest manifolds available for quick method changeover.

#### Advanced Sampling

AA500 Samplers are fast, robust and available with various rack sizes to meet your sample requirements. Samples can be added at any time during the run.

#### **POWERFUL SOFTWARE**

The instrument control and data acquisition software has been completely redesigned to give total digital control of all the analyzer's functions. The AACE software package is now the most powerful, intuitive software driving a range of enhancements such as the reanalysis of runs and online and post debubbling.

Featuring Innovation & Intelligent Technologies

- Ultra-low detection limits
- > Total automatic start up & shutdown including platen release and self-wash
- Auto standards and dilution
- Easy reagent management with auto level sensing
- Multi-test manifolds for different nutrients with no hardware changes
- New, all-in-one housing design is both compact and modular
- Easy to upgrade

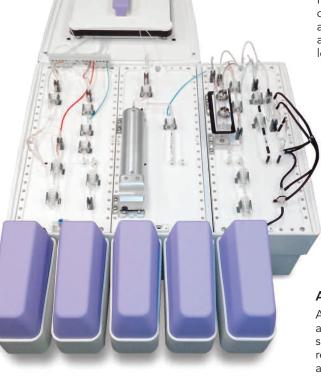


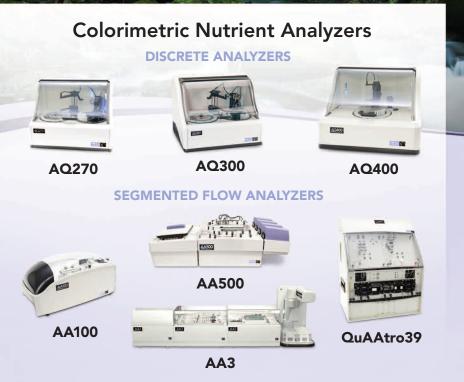


# PLEASE VISIT

www.seal-analytical.com

or contact your local SEAL Analytical representative about your specific application.





# 50 Years' Experience in Environmental Analysis Built into Every Analyzer

50 years' experience in designing, developing and manufacturing automated wet chemistry analyzers specifically for very low detection levels in environmental applications has helped SEAL to apply the most useful, easy to use features into the SEAL range of Discrete and Segmented Flow analyzers. The SEAL analyzers are widely acknowledged as the best for environmental analysis, giving you everything you need to achieve equal or superior results to the manual and approved laboratory methods the SEAL analyzer replaces.



SEAL Analyzers are monitoring environmental samples in every corner of the globe. They are manufactured in the USA, Germany and the Netherlands. Engineering and chemistry support is provided from SEAL global facilities in USA, Germany, England, the Netherlands and China along with a worldwide network of specialist distributors.

#### COMPREHENSIVE SUPPORT

We offer comprehensive applications, technical service and software support.

#### INCLUDING

- A choice of preventative maintenance and service contracts to meet your specific requirements
- In-house and online training
- Guaranteed availability of genuine consumables and spare parts
- Adaptation of methods to specific requirements such as matrix, range or detection limit
- Continuous in-house development of software to incorporate new customer requested features

## Robotic Handling Systems

SEAL Robotic Minilab systems for automating sample (pre) treatment in the laboratory improving your sample handling efficiency. Typical applications include BOD, pH, COD, Alkalinity, and conductivity measurements with options such as decapping/capping, sample splitting, and filtration. Call us about your laboratory needs and we will design a robot to suit you.



www.seal-analytical.com

SEAL Analytical is a global company with offices worldwide - contact us at:

#### SEAL Analytical, Inc.

Analytica

6501 West Donges Bay Road Mequon, WI 53092 United States Tel: +1 (262) 241 7900 Fax: +1 (262) 241 7970 sales@seal-us.com

#### SEAL Analytical Ltd.

Porvair Sciences Clywedog Road South Wrexham Industrial Estate Wrexham LL13 9XS United Kingdom Tel: +44 (0) 1978 807273 sales.uk@seal-analytical.com

#### SEAL Analytical Netherlands

ROHASYS BV Provincienbaan 4 5121 DL Rijen The Netherlands Tel: +31 161 240152 Fax: +31 161 240153 info@rohasys.com

#### **SEAL Analytical GmbH** Werkstrasse 5 D-22844 Norderstedt Germany **Tel:** +49 (0)40 60 9292 9-00

Fax: +49 (0)40 60 9292 9-00 info.germany@seal-analytical.com

#### SEAL Analytical Shanghai Room 413, 12th Building No. 128 Xiangyin Road

Shanghai, 200433 China Tel: +86 21 3362 5002 Fax: +86 21 3362 5002

#### AA500 3.0Q USA 0821



US EPA Gulf Ecosystem Measurement and Modeling Division 1 Sabine Island Dr Gulf Breeze, FL 32651

July 10<sup>th</sup>, 2024

Dear Jessica,

Thank you for choosing to investigate the benefits of our AutoAnalyzer 500 (AA500) system. Please find enclosed our quotation as requested.

SEAL Analytical is a global manufacturer and supplier of environmental equipment in the USA. This ensures that analytical laboratories get the support that they require from a company focused on their requirements. Within SEAL we have over 85 years of experience in segmented flow analysis to provide you with a total support solution.

The quotation provided is for the latest version of the most successful segmented flow analyzer ever made – the AutoAnalyzer 500 (AA500). The SEAL AA500 is the system of choice for seawater and low level analysis as well as waters and soil laboratories worldwide. We work closely with research organizations to ensure our methods, hardware, and software deliver results with the lowest detection limits and highest reproducibility.

Technical support is a large factor in our success. We have a dedicated technical support team that are all full-time employees of SEAL – we do not use contractors. We have a dedicated email address and phone number that is always picked up by a chemist.

We will be in contact with you in the near future but, in the meantime, if I can be of any further service, please do not hesitate to contact me.

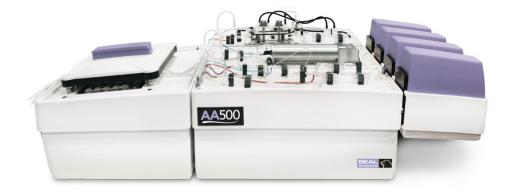
Yours sincerely, On behalf of SEAL Analytical Inc.

ham dim

Johann Hinck Technical Sales Chemist



#### Equipment offered – SEAL AutoAnalyzer AA500



The <u>all new</u> AA500 incorporates the same principles employed in a basic segmented flow analyzer (SFA) system, of an autosampler, a peristaltic pump, a chemistry manifold, a detector and data acquisition software. Sample and reagents are pumped continuously through the chemistry manifold. Air bubbles are introduced at regular intervals forming unique reaction segments which are mixed using glass coils. Glass is ideal, as it is inert, stays clean and enables easy visual checks.

#### **Detailed Specifications:**

#### Sampler Module AS2

- ☑ Holds 180 samples (2 mL cups or 8 mL tubes) or 120 samples (5 mL cups or 12 mL tubes).
- ☑ Other racks are available for different sample tubes.
- $\ensuremath{\boxtimes}$  User-defined special sample racks can be used.
- Separate 22 position rack for calibration and quality control standards.
- ☑ Sampler can access any cup at any time. This enables duplicate sampling and automatic repeats of off-scale or carryover-affected samples.
- ☑ Calibration and quality control standards can be taken from the same cup as often required.
- ☑ Constant inter-sample air bubble size at any cup position.
- ☑ Programmable speed.
- ☑ Stainless steel and PEEK samples probes for all sample types, including acidic samples.
- **Optional:** Syringe diluter for off-scale dilutions and automated standard preparation
- Optional: air or paddle mixing
- Optional: multiple probes (up to 4) on one sampler



SEAL Analytical

Commercial in confidence

#### AA500 Pump

- ☑ Automated and unattended Platen engage and release for remote system start up or shutdown
- ☑ Capacity for 34 pump tubes plus up to 8 air supply tubes.
- $\square$  Can be switched to high speed for fast start-up and wash-out.
- $\square$  Speed can be controlled on the pump or from the computer.
- ☑ Computer-controlled intermittent mode to save reagents after a run.
- ☑ Digitally-controlled air injection system is synchronized with pump rollers to ensure regular sized and spaced air bubbles, giving reproducible segment volume for high analytical precision.
- ☑ Leak detector automatically stops the pump motor and sends a signal to the PC if a leak occurs.
- Accessory kit with special lubricant included.
- ☑ Utilizes 3 shoulder pump tubing from SEAL Analytical
- ☑ Optional valves for automatic dilution.
- ☑ Optional valves for automatic reagent wash-out

#### A500 High Performance Chemistry Module

- Method documentation includes instructions for preparation of standards, performance data, reagent safety data, manifold description with part numbers and a list of spares and consumables with part numbers.
- ☑ Hydraulic components are glass, chosen for its inert chemical properties. Mixing coils are mounted on the surface of the method cartridge for easy operator verification of correct performance.
- ☑ Hydraulic component internal diameter is 2.0 mm to limit the risk of blockage from dirty samples.
- ☑ On-board heaters have high accuracy proportional control and user-replaceable coils.
- ☑ Leak detector prevents damage to the analyzer in the event of chemical spills.
- ☑ Full software control
- ☑ Optional dialyzer is available to eliminate background interference
- ☑ Optional distillation for inline sample preparation
- ☑ Optional digestion for inline sample preparation
- ☑ Optional E-valve for Cd column for Nitrate reduction
- Optional integrated autovalves







#### **AA500 High Resolution Photometer**

- ☑ Dual Beam (LED light source) detection system with real time baseline correction for high stability.
- ☑ Reduced maintenance with LED light source lasting up to 50,000 hours.
- ☑ No de-bubbling necessary software de-bubbling algorithm performed, hence reducing carryover and hydraulic noise.
- ☑ Baseline and sensitivity setting controlled automatically from PC
- ☑ No user adjustment needed when new lamp or flow-cell installed.
- ☑ 10mm, 30mm, 50mm and 500mm flow-cells can be fitted according to method sensitivity requirements.
- Flow-cell and transmission tubing are contained inside the photometer housing for optimum temperature equilibration and added protection of the flow-cell and connections.
- Accessory kit included with spare lamp and special tools.
- ☑ Extended wavelength range 250-880nm for extended sensitivity at low- to mid-wavelengths.

#### AAce Software and Data Management:

The AACE software is used to automate the AA500 and acquire data. The software is capable of exporting directly into Excel format for ease of use or connecting to a LIMS. AACE software is compatible with Windows 10.





#### Quote No: JH-240307-JA Rev 1

**Price Quotation for** 

US EPA Gulf Ecosystem Measurement and Modeling Division 1 Sabine Island Dr Phone: (850) 934-9215 Gulf Breeze, FL 32651 Email: aukamp.Jessica@epa.gov

For the attention of Jessica Aukamp

## 3 Channel AA500 HR System with Auto Start-up and Shutdown

1	SEAL AS2 Random Access Sampler			
1	Pump with automatic engage and release platen for unatter	nde	d operation	
1	1 Chemistry Multi-test Manifold (MT19) For analyzing Nitrate+Nitrite			
1	1 Chemistry Multi-test Manifold (MT19) For analyzing Nitrite			
1 Chemistry Multi-test Manifold (MT19) For analyzing ortho-Phosphate				
1	Electronic switching value for Cadmium column			
3	High Resolution Digital Photometer Detectors			
3	10 mm Flowcells			
3	Optical wavelengths: 540 nm (x2), and 880 nm			
3	Complete method documentation as detailed above			
2	Sets of reagent valves (for automatic switching between wa	ater	and reagent)	
1	AACE Software			
1	System Accessory Kit			
1 1	Consumable Kit, including one change of pump tubes Electronic User Manuals for Hardware and Software			
I				
Pac	kage Price	\$	64,400	
_	• • • • • • • • • • • • • • • • • • • •			
Les	s Government Discount – 10% - \$ 6,440			
Inst	allation & Training package, 3 Days on site	\$	3,900	
		_		
War	ranty, 12 month parts & labor	in	cluded	
Frei	ght and Handling	\$	2,000	
_				
Disc	counted OFFER Price	\$	63,860	

#### Terms and Conditions:

Terms:Net 30 daysDelivery:10-12 weeks after receipt of orderFreight and Handling:\$2,000Sales Tax:Not Included. It will be payable unless you are exempt.

## Issue Date: July 10<sup>th</sup>, 2024

Valid Until: August 10<sup>th</sup>, 2024

OPTIONS:



0111			
1.	High Spec Computer: Includes 21" flat panel monitor		\$ 1,500
2.	APC Back-UPS PRO 1000VA		\$ 320
3.	Upgrade to larger AS4 sampler (4 rack)		\$ 1,500
4.	12 Month Consumable Kit		\$ 400/channel
5.	12 Month Spares Kit		\$ 400/channel
6.	12 Month Spares Kit (w/ Flowcell)		\$ 925/channel
7.	Printed User Manuals for Hardware and Software		\$ 150
8.	Annual Service Contract including on-site PM visit	Basic	\$ 5,275/year
	Including Onsite PM Visit and emergency visit	Premium	\$ 7,370/year

#### NOTE:

The PC may be purchased by your company; however, you must meet our minimum specifications - available on request.

SEAL Analytical will not assume responsibility for damage caused to instrument from power outages or power surges in the laboratory.

#### **Technical Support Services**

#### **Technical Support:**

We provide a telephone/email/fax service desk at our Milwaukee facility from 8:00 AM to 5:30 PM as part of our standard service to our customers. All service calls are logged and an in-house Engineer or Chemist will trouble-shoot the problem by telephone. Our statistics show that over 90% of user questions are diagnosed and corrected by telephone and/or email intervention, without a site visit being necessary.

If this does not resolve the problem, a field-based Technical Specialist is assigned to visit the site.

#### **Response Time / Repair Time:**

Our <u>typical</u> response time for a Specialist to reach a site would be less than 24 working hours. We use state of the art messaging equipment to communicate with field staff before, during, and after each service episode. All support staff are our own employees, and not contract labor, and therefore would be dispatched from the Milwaukee site.

#### **Technical Support Service Contracts:**

A full range of customer support contracts are available. It is our aim to supply a fully-installed system and provide the application, software and engineering back up to ensure the highest performance from your new analytical system.

#### Focus Groups:

SEAL actively supports and sponsors Analyzer User Groups, arranging meetings on a regular basis, typically annually. The Company finds this an invaluable means of ensuring continued high levels of customer satisfaction and a useful forum for prioritizing product developments, and to introduce product enhancements.



#### Equipment Life Expectancy:

While every user is different, we have built in the same ruggedness to the AA500 that existed in our previous two generations of this equipment. We can give examples of user who have equipment of this type still in regular use up to 30 years after purchase.

Our commitment to our customers has ensured that all generations of the systems, while having been equipped with the latest electronics and design concepts, have been compatible with previous generation modules and chemistry units. These have also used the same pump tube types, ensuring that inventory has not been scrapped.

#### AA500 Training

The AA500 system and software design has been strongly influenced by listening to SEAL users and regulatory requirements. As a result, the system is easy and intuitive to use. An on-site training course is conducted at installation covering the following aspects of the system:

- Introduction
- Hardware overview
- Principles of operation
- Daily routine
- System software operation, including:

Analysis parameters, Run parameters, QC definition, Routine running, Data storage routines LIMS interface

- Analyzer routine maintenance
- Troubleshooting/corrective maintenance
- Method Applications



#### Warranty Policy:

- Subject to the conditions set out below, the Company warrants that the Goods will correspond with their specification at the time of delivery and will be free from defects in material and workmanship for a period of 12 months from the date of the initial use or 15 months from delivery, whichever is the first to expire.
- The above warranty given by the Company subject to the following conditions:
- The Company shall be under no liability in respect of any defect in the Goods arising from any drawings, design or specification supplied by the Buyer;
- The Company shall be under no liability in respect of any defect arising from fair wear and tear, willful damage, negligence, abnormal working conditions, failure to follow the Company's instruction (whether oral or in writing) (including instructions regarding preventative maintenance), misuse or alteration or repair of the Goods without the Company's approval;
- The Company shall be under no liability under the above warranty (or any other warranty, conditions of guarantee) if the total price of the Goods has not been paid by the due date of payment;
- The above warranty does not extend to parts, materials or equipment not manufactured by the Company, in respect of which the Buyer shall only be entitled to the benefit of any such warranty or guarantee as is given by the manufacturer to the Company.
- Any claim by the Buyer which is based on any defect in the quality or condition of the Goods or their failure to correspond with specification shall (whether or not delivery is refused by the Buyer) be notified by the Company within 7 days from the date of delivery (where the defect or failure was not apparent on reasonable inspection) within a reasonable time within discovery of the defect or failure. If delivery is not refused and the Buyer does not notify the Company accordingly, the Buyer shall not be entitled to reject the Goods and the Company shall have no liability for such defects or failure and the Buyer shall be bound to pay the price as if the Goods had been delivered in accordance with the Contract.
- Where any valid claim in respect of any of the Goods which is based on any defect in the quality of condition of the Goods or their failure to meet specification is notified to the Company in accordance with these Conditions, the Company shall be entitled to replace the Goods (or the part in question) free of charge, at the Company's sole discretion, refund to the Buyer the price of the Goods (or a proportionate part of the price), but the Company shall have no further liability to the Buyer.
- Except in respect of the death or personal injury caused by the Company's negligence, the Company shall not be liable to the Buyer by reason of any representation, or any implied warranty, condition or other term, or any duty at common law, or under the express terms of the Contract, for any consequential loss or damage (whether for loss of profit or otherwise), costs expenses or other claims for consequential compensation whatsoever (and whether caused by the negligence of the Company, its employees or agents or otherwise) which arise out of or in connection with the supply of Goods or their use resale by the Buyer except as expressly provided in these Terms.
- The Company shall not be liable to the Buyer or be deemed to be in breach of the Contract by reason of any delay in performing, or any failure to perform, any of the Company's obligations in relation to the Goods, if the delay or failure was due to any cause beyond the Company's reasonable control. Without prejudice to the generality of the foregoing, the following shall be regarded as causes beyond the Company's reasonable control; Act of God, explosion, flood, tempest, fire or accident; war or threat of war, sabotage, insurrection, civil disturbance or requisition, acts, requisition, regulations, bye laws, prohibition or measures of any kind of the part of any Governmental, Local Authority; import or export regulations or embargo's, strike, lock-outs or other industrial actions or trade disputes (whether involving employees of the Company or of a third party); difficulties in obtaining raw materials, labor, fuel, parts or machinery; power failure or breakdown in machinery.