

GAMMA SILT & PARTICULATE RAW WATER MONITOR
for
DRINKING WATER FILTRATION & WASTEWATER SYSTEMS

砂石/粒子未净化水监测仪

饮用水过滤&废水监测系统

Model Series-- RAWA-GP (Gamma) & RAWA-BGP (Beta Gamma)

FEATURES: 特点:

- MEASURES RAW WATER AT OR BELOW EPA/DHS **PAG LEVELS** - *Protective Action Guideline Levels and Military Drinking Water Limits*
- 测量未处理水，测量限值符合或低于环保部门/国土资源局要求--- *保护行动指南和军队饮用水限值*
- DETECTS GAMMA SPECTRUM (MCA) Isotope Identifier
- 探测伽马辐射核素多道分析仪
- AVAILABLE IN PORTABLE OR INSTALLED VERSION
- 提供便携式或安装式
- REAL TIME, IN-LINE, CONTINUOUS MONITOR
- 实时，在线，连续监测
- HIGH SENSITIVITY IN SILT & PARTICULATES
- 测量砂石&粒子灵敏度高
 - ❖ DESIGNED FOR DRINKING WATER FILTRATION & WASTEWATER SYSTEMS
 - ❖ 设计测量过滤饮用水&废水
- NO REAGENT TANKS TO FILL
- 无需添加试剂
- NO WASTE STREAM
- 无废水流
- EASY CALIBRATION
- 易刻度
- PREVENT ACUTE HEALTH EFFECTS
- 防止急性健康影响
- REDUCE RISK OF CHRONIC EXPOSURE
- 减少慢性辐射暴露风险

NOTE: 注意:

- THE WORLD'S ONLY PAG-LEVEL RAW WATER GAMMA MONITOR
- 世界上唯一保护行动指南用生水伽马监测器
- ADDITIONAL BETA DETECTOR (RAWA-BGP)
- 附加 β 探测器(RAWA-BGP)
- FULL SCADA COMPATIBILITY
- SCADA 全兼容



TECHNICAL ASSOCIATES
OVERHOFF TECHNOLOGY

7051 Eton Ave., Canoga Park, CA 91303
818-883-7043 (Phone) 818-883-6103 (Fax)

tagold@nwc.net

WWW.TECH-ASSOCIATES.COM

Divisions of



US NUCLEAR CORP

GAMMA SILT & PARTICULATE RAW WATER MONITOR
for
DRINKING WATER FILTRATION & WASTEWATER SYSTEMS

砂石/粒子未净化水监测仪

饮用水过滤&废水监测系统

Model Series– RAWA-GP (Gamma) & RAWA-BGP (Beta Gamma)

APPLICATION:应用

- ❖ Install **RAWA-GP** on your water inlet pipe of your water filtration system to automatically and continuously monitor drinking water 24/7 for any GAMMA radioactive contamination.
- ❖ 将RAWA-GP安装在水净化系统入口处自动连续24小时不间断监测饮用水中伽马辐射污染物。
- ❖ Install **RAWA-BGP** on your water inlet pipe of your water filtration system to automatically and continuously monitor drinking water 24/7 for any BETA/GAMMA radioactive contamination.
- ❖ 将RAWA-GP安装在水净化系统入口处自动连续24小时不间断监测饮用水中伽马/贝塔辐射污染物。
- ❖ Monitor for contamination in silt and particulates of ground or surface **RAW WATER**.
- ❖ 监测地表未处理水中泥沙和粒子辐射污染
- ❖ Monitor liquid waste stream from laboratory or plant **to maintain regulatory compliance**.
- ❖ 监测实验室或电站液体污水流，以确保符合规定
- ❖ Available as an add-on for TA's State-of-the-Art
- ❖ 可与 TA 公司的代表当今科技水平的 SSSGen-SSS 终极饮用水监测系统结合使用

NexGen-SSS Finished Water Monitor System.

PROBLEM: 存在问题:

RAW WATER such as Wastewater and effluent streams potentially carry radioactive materials. Up until now direct measurement entailed pulling samples, taking them or sending them to a lab, waiting for results, and paying a high monetary price for the results. This is a labor intensive, not timely, and not cost effective manner in which to detect radiation in water.

未处理水指可能携带辐射物质的废水和液体流出物。直到现在，直接测量涉及到取样，送到实验室等结果，而且产生高额费用，这是实验室检测水中辐射方式，集中，不及时，不计成本。

SOLUTION: 解决解决

For the first time in a **Continuous Real Time water monitor** the **RAWA-GP** solves this problem by continuously monitoring **RAW WATER** using a sensitive Gamma radiation detector. Monitor for both Beta and Gamma contamination with the **RAWA-BGP**.

水监测器RAWA-GP，一款连续实时水监测器，首次通过伽马辐射探头，连续监测未处理水解决了这个难题。型号**RAWA-BGP**同时监测贝塔和伽马辐射污染。

The information from this detector is analyzed and displayed in units of picoCuries per liter or other units of choice.

The count times are user settable. Calculations are automatically updated every minute, every hour and every day. Measurements of radiation concentration and total discharge are logged 24 hr/day, 7 day/week. The longer update



TECHNICAL ASSOCIATES
OVERHOFF TECHNOLOGY

7051 Eton Ave., Canoga Park, CA 91303
818-883-7043 (Phone) 818-883-6103 (Fax)

tagold@nwc.net

WWW.TECH-ASSOCIATES.COM

Divisions of



US NUCLEAR CORP.

GAMMA SILT & PARTICULATE RAW WATER MONITOR
for
DRINKING WATER FILTRATION & WASTEWATER SYSTEMS

砂石/粒子未净化水监测仪

饮用水过滤&废水监测系统

Model Series– RAWA-GP (Gamma) & RAWA-BGP (Beta Gamma)

times correspond with greater precision and increased sensitivity. Using TA Tried and True sample collection & measurement technology this detector measures Gamma from silt & particulates in any radioactive liquids.

Both the **RAWA-GP** and the **RAWA-BGP** give high sensitivity measurement of Gamma and Beta emitting silts & particulates in **RAW WATER** with a built in Isotope Identifier.

Sensitivities in the daily updates meet or exceed the DHS **PAG (Protective Action Guideline Levels)** for drinking water.

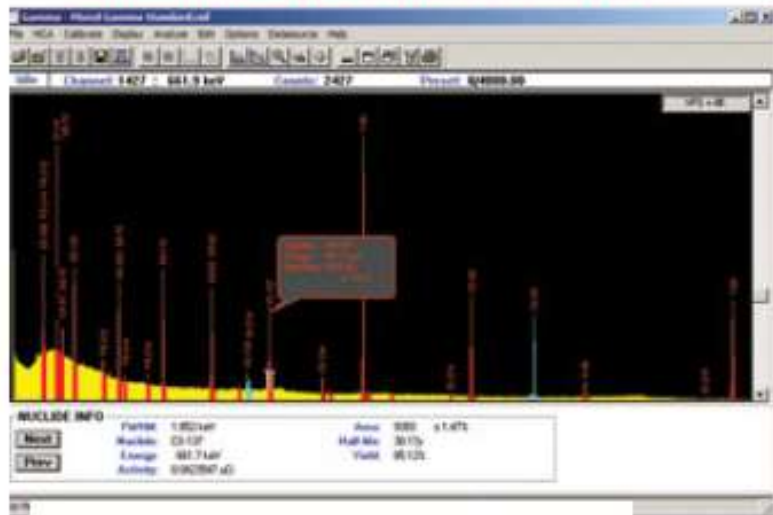
探测器数据分析和显示单位pCi/L, 可选择其它单位。计数时间用户设定, 计算每分钟、每小时, 每天自动更新。测量浓度和测量结果一天24小时记录, 更新时间越长, 响应越精确, 灵敏度越高。此仪器使用TA公司“Tried and True”采样和测量技术, 测量辐射流出物中的泥沙/粒子中的伽马。

型号**RAWA-GP**和**RAWA-BGP**测量未处理水中的泥沙/粒子伽马和贝塔辐射物, 带内置核素识别器, 高灵敏度高。

每日更新灵敏度达到或超过国土安全局“保护行动指南”“饮用水标准。”

GAMMA-MCA ISOTOPE IDENTIFIER

GAMMA-MCA ISOTOPE IDENTIFIER



TECHNICAL ASSOCIATES
OVERHOFF TECHNOLOGY

7051 Eton Ave., Canoga Park, CA 91303
818-883-7043 (Phone) 818-883-6103 (Fax)

tagold@nwc.net

WWW.TECH-ASSOCIATES.COM

Divisions of



US NUCLEAR CORP

GAMMA SILT & PARTICULATE RAW WATER MONITOR
for
DRINKING WATER FILTRATION & WASTEWATER SYSTEMS

砂石/粒子未净化水监测仪

饮用水过滤&废水监测系统

Model Series- RAWA-GP (Gamma) & RAWA-BGP (Beta Gamma)

DESCRIPTION: 描述

Model **RAWA-GP** is a single detector water monitor /controller for measuring Gamma emitting radionuclides in **RAW WATER**. Model **RAWA-BGP** is a dual detector water monitor measuring both Beta and Gamma contamination in **RAW WATER**. The electronics are microprocessor with a full color monitor. The system is modular allowing changes or additions of functions at a later date, and allowing rapid repair by module replacement in the field. The system is covered by TA's full one year warranty. On-site service contracts available in many areas.

型号RAWA-GP为单探头水监测器测量未处理水中伽马辐射核素。RAWA-BGP为双探头测量未处理水中的伽马和贝塔污染。电子学为全彩屏微处理器，系统为模块式允许更换或日后功能拓展，现场可更换模块进行快速维修。系统由TA公司提供一年质保，许多地区可提供现场服务。

Optional detector shields have rugged housing for long useful life and easy decontamination. The Gamma detector is easily changed via disconnect fittings. All connections are sealed against leaks. The standard water moving system is based on a high precision pump. It has a 10 liter per minute capacity. System can also be operated using available water pressure in which case no pump is required.

可选购带结实外罩的探头屏蔽，使用寿命长容易去污。伽马探头通过断开装置快速更换。所有连接件均密封防漏，配备高精度泵的标准水动系统。每分钟10升容量，系统可利用现有水压操作而无需安装泵。

A wide range of pump capacities are available to meet user specific needs. The entire system is typically mounted on the wall. A cart-mounted system is an available option. **Model Series RAWA-GP** comes complete with all cabling tubing and connectors in place and is ready to operate. 115 Volt 60Hz is standard; 220 Volt 50/60 Hz or battery operation is optional. The system's **RAW WATER** detectors and electronics are ruggedly built.

可提供不同容量泵以满足客户具体要求。整个系统安装在墙上，也可以选择车载型。此系列型号自带全部缆线管子和连接件，一切就绪，标准115V 60Hz，可选 220V 50/60 Hz或者选择电池操作。此未处理水监测仪电子学部分非常结实耐用

Detector: 探头

RAW WATER is measured for Gamma or both Beta/Gamma-emitter content using a scintillation detector and an MCA analyzer with greater than 1,000 channels. The energy range is user settable. For example the MCA can be set for Gamma energy of 10 KeV to 3 MeV.

使用闪烁探头和1,000通道多道分析仪测量未处理水中伽马或贝塔/伽马发射物，能量范围可用户设定，如分析仪可设定为伽马能量10 KeV - 3 MeV

Peak Detection and Isotope Identification: 峰值检测和核素识别

TA SMART-PEAK™ Software detects radiation peaks even at very low Gamma concentration. In the event of high activity and during system calibration the isotope identifier function takes over and displays the exact radioactive nuclides in water.

TA公司**SMART-PEAK™** 软件甚至在低能伽马浓度条件下检测辐射峰值，在高活度和系统标定时，核素识别功能启动，显示水中确切辐射核素



TECHNICAL ASSOCIATES
OVERHOFF TECHNOLOGY

7051 Eton Ave., Canoga Park, CA 91303
818-883-7043 (Phone) 818-883-6103 (Fax)

tagold@nwc.net

WWW.TECH-ASSOCIATES.COM

Divisions of



US NUCLEAR CORP.

GAMMA SILT & PARTICULATE RAW WATER MONITOR
for
DRINKING WATER FILTRATION & WASTEWATER SYSTEMS

砂石/粒子未净化水监测仪

饮用水过滤&废水监测系统

Model Series– RAWA-GP (Gamma) & RAWA-BGP (Beta Gamma)



FLOW PATH: 流路

- Water Inlet port
- 进水口
- Pressure relief valve
- 压力释放阀
- Ultra Violet Sterilizer (Optional)
- 紫外线消毒器 (选购)
- Particulate Filter with Gamma Detector
- 带伽马探头粒子过滤器
- Flow Meter
- 流量计

FLOW PATH FEATURES:流路特点:

- No liquid scintillate or reagents are added
- 无液体试剂添加
- No additional toxic waste is generated.
- 不产生有毒废物
- Tested water is clean and returns to the water source.
- 被测水清洁可返回水源



TECHNICAL ASSOCIATES
OVERHOFF TECHNOLOGY

7051 Eton Ave., Canoga Park, CA 91303
818-883-7043 (Phone) 818-883-6103 (Fax)

tagold@nwc.net

WWW.TECH-ASSOCIATES.COM

Divisions of



US NUCLEAR CORP

GAMMA SILT & PARTICULATE RAW WATER MONITOR
for
DRINKING WATER FILTRATION & WASTEWATER SYSTEMS

砂石/粒子未净化水监测仪

饮用水过滤&废水监测系统

Model Series– RAWA-GP (Gamma) & RAWA-BGP (Beta Gamma)

SAMPLE FLOW RATE:样品流率

System Flow Rate: 10 liters per minute
系统流率: 10升/分钟
Optional: Wide range of flow rates is available
选项: 可选不同流量

TEMPERATURE 温度

System Sample: Up to 90° F liquid (optional to higher temperatures)
系统样品: 液体可到90° F (可选更高温度)
Ambient: 65 - 100 ° F (wider temperatures ranges optional)
环境: 65 - 100 ° F (可选更高温度)
Optional: Cooler model **Cool-33** for detector & sample is used in case of Higher sample or ambient temperatures.
选择: 较高温度样品或环境温度下可选冷却装置**Cool-33**

RAWA-GP Series is typically wall mounted as is the **NexGen-SSS** filtration system pictured above.

SPECIFICATIONS	RAWA-GP (Gamma Only)	RAWA-BGP (Beta & Gamma)
Radiation Detected	Gamma	Beta
Materials Monitored	Silt & Particulates	Silt & Particulates
Scintillator Shape	2" x 2" dia.	2" dia. x .02" thick
Scintillating Crystal	NaI TI (Sodium Iodide) Spectroscopic Grade or Optional LaBr ₃ (Lanthanum Bromide)	Beta Scintillation
Standard Shielding	None	None
Additional Shielding – Optional	½" Thick Coverage	½" Thick Coverage
Multi-Channel Analyzer	SmartPeak Detection Software	N/A



TECHNICAL ASSOCIATES
OVERHOFF TECHNOLOGY

7051 Eton Ave., Canoga Park, CA 91303
818-883-7043 (Phone) 818-883-6103 (Fax)

tagold@nwc.net

WWW.TECH-ASSOCIATES.COM

Divisions of



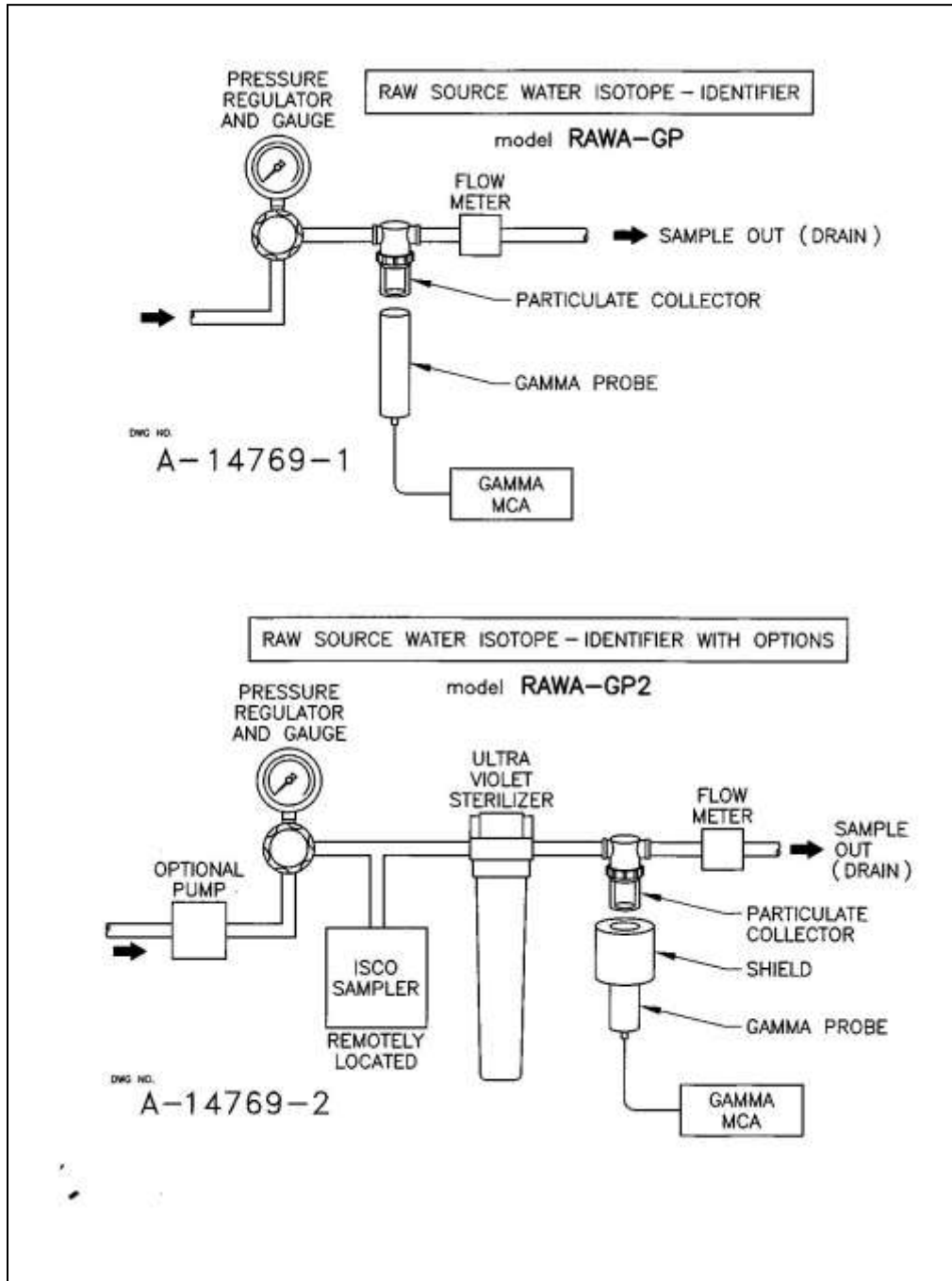
US NUCLEAR CORP

GAMMA SILT & PARTICULATE RAW WATER MONITOR
for
DRINKING WATER FILTRATION & WASTEWATER SYSTEMS

砂石/粒子未净化水监测仪

饮用水过滤&废水监测系统

Model Series- RAWA-GP (Gamma) & RAWA-BGP (Beta Gamma)



**TECHNICAL ASSOCIATES
OVERHOFF TECHNOLOGY**

7051 Eton Ave., Canoga Park, CA 91303
818-883-7043 (Phone) 818-883-6103 (Fax)

tagold@nwc.net

WWW.TECH-ASSOCIATES.COM

Divisions of



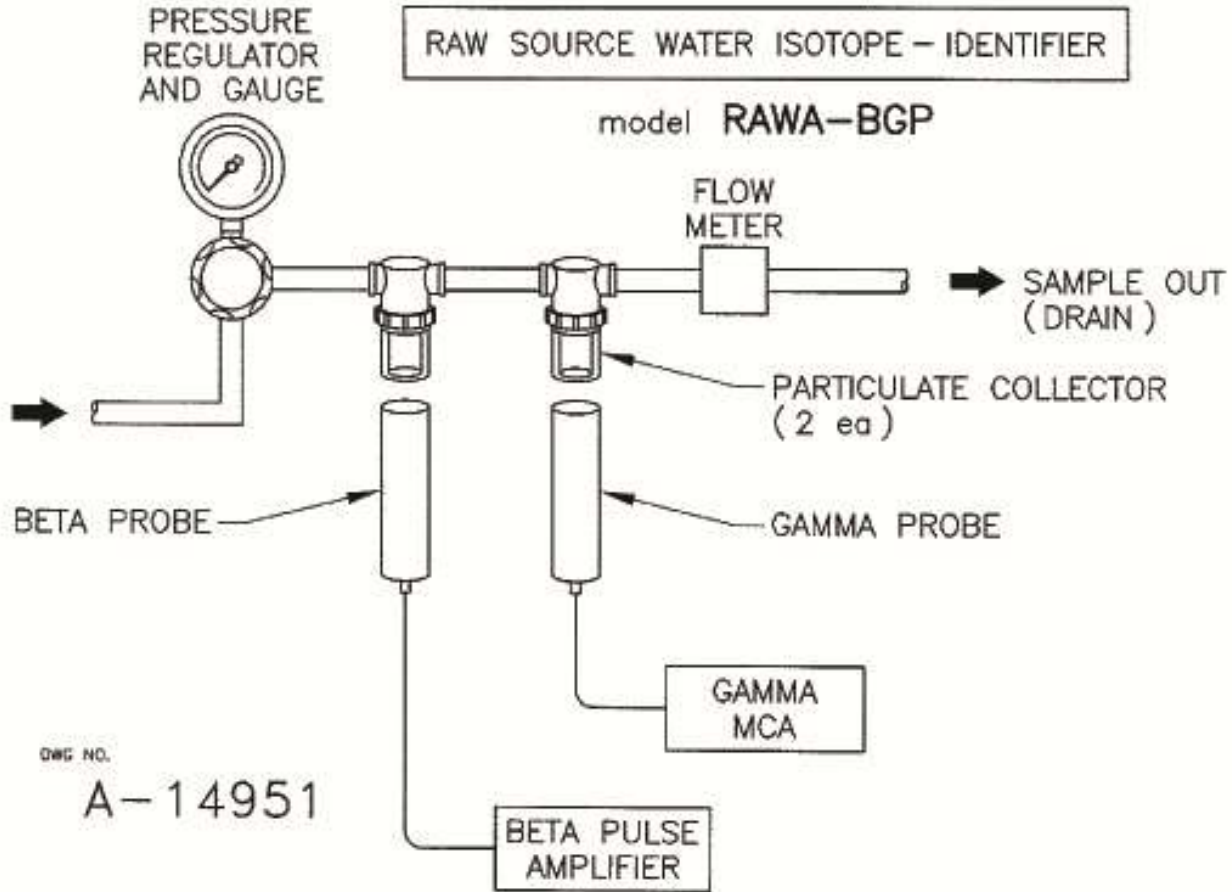
US NUCLEAR CORP

GAMMA SILT & PARTICULATE RAW WATER MONITOR
for
DRINKING WATER FILTRATION & WASTEWATER SYSTEMS

砂石/粒子未净化水监测仪

饮用水过滤&废水监测系统

Model Series- RAWA-GP (Gamma) & RAWA-BGP (Beta Gamma)



TECHNICAL ASSOCIATES
OVERHOFF TECHNOLOGY

7051 Eton Ave., Canoga Park, CA 91303
818-883-7043 (Phone) 818-883-6103 (Fax)

tagold@nwc.net

WWW.TECH-ASSOCIATES.COM

Divisions of



US NUCLEAR CORP

GAMMA SILT & PARTICULATE RAW WATER MONITOR
for
DRINKING WATER FILTRATION & WASTEWATER SYSTEMS

砂石/粒子未净化水监测仪

饮用水过滤&废水监测系统

Model Series-- RAWA-GP (Gamma) & RAWA-BGP (Beta Gamma)

DATA:-Analysis-Display-Data Storage & Transmission

数据-分析-显示-数据存储&传送

- At each peak or area of interest, net counts are converted automatically to concentration units of picoCuries/liter (using the detector efficiencies automatically measured and stored previously by **RAWA-GP Series** semi-automatic self-calibration procedure.)
- 每个峰值或兴趣区，净计数自动转换为浓度单位pCi/L(自动使用以前由RAWA-GP系列半自动自校准程序自动测量并存储的探头效率)
- The concentration and total activity released and MDA levels are continuously calculated and recorded. This real-time information will alert the notification system. All data is saved to hard drive in spreadsheet format.
- 浓度和释放活度，最小探测活度连续计算并记录，这些实时信息将激活通知系统，所有数据以电子表格格式存储在硬盘里。
- Historical data is easily displayed on-screen and/or available for print in tabular or graphical format, showing quantitative information as well as trends. Data is recorded every minute providing excellent time resolution.
- 历史记录容易显示，可以打印成表格和图形模式，显示量化信息或趋势图，数据每分钟记录，时间分辨率卓越。
- On Board Data Storage
- 机载数据存储
- USB / Ethernet Ports (with security) make it easy to archive and further analyze data.
- USB/以太网接口（安全型）容易存档和进一步分析数据
- Continuous, Reliable Data – **YES** False Alarms – **NO**
- 连续，可靠数据-是的 虚报-无

ALARMS:报警

- Our systems have multiple layers of protections and redundancy in both the software and the physical act of reporting an alarm, preventing false alarms. An optional alarm voting system is available so that alarms will come on only if all the data is consistent and conclusive. The data is continuously recorded to allow human interpretation.

我们系统无论在软件方面还是在实际应用中有保护层和多余度，防止虚假报警，这包含一个报警表决系统，只有所有数据一致和确定情况下才报警。持续数据录入以便人们解读

- **Alarms:** Each alarm activates fail-safe relays. Relay alarms are available to the user.
报警：每次报警激活故障安全继电器，可提供继电器报警



TECHNICAL ASSOCIATES
OVERHOFF TECHNOLOGY

7051 Eton Ave., Canoga Park, CA 91303
818-883-7043 (Phone) 818-883-6103 (Fax)

tagold@nwc.net

WWW.TECH-ASSOCIATES.COM

Divisions of



US NUCLEAR CORP

GAMMA SILT & PARTICULATE RAW WATER MONITOR
for
DRINKING WATER FILTRATION & WASTEWATER SYSTEMS

砂石/粒子未净化水监测仪

饮用水过滤&废水监测系统

Model Series-- RAWA-GP (Gamma) & RAWA-BGP (Beta Gamma)

OPTIONAL: 选购

- **Triggered Aliquot:** This feature automatically collects and stores a small water sample for independent analysis whenever an alarm or event of interest occurs.

触发式等分测量: 在报警或兴趣区事件发生时, 此功能自动收集并储存少量水样进行独立分析测量

- **UV Lamp:** Used on inlet as algacide.
- 紫外线灯: 安装在入口用作杀藻剂

3 GHz COMPUTER INCLUDES:

3 GHz电脑包括

Ultra fast 3 GHz CPU

极速CPU

1 Terabyte

1TB

Flat Screen Color Monitor

平面彩屏

High Speed Ethernet access for LAN hookup.

高速以太网接入

Specialized software designed for Gamma Spectrum Detection and user friendly adaptability for your needs.

伽马核素检测专用软件, 可根据需要更改。

Data from the 1024 channel MCA-Multi-channel analyzer is interfaced with a USB or Ethernet port.

1024多道MCA-Multi-channel分析仪带USB和以太网接口

Full SCADA compatibility.

全SCADA兼容

Optional MODBUS or other protocols.

可选择MODBUS或其它协议

Standalone system is standard.

标准独立系统

Also available as an add-on for TA's State-of-the-Art NexGen-SSS Finished Water Monitor System.

可作为 TA 公司代表当前科技水平的终极水检测系统 NexGen-SSS 附加型号

DIMENSIONS, WEIGHT, SHIPPING INFORMATION: 尺寸、重量、和装运信息

Dimensions: 31" wide x 8" deep x 30" high

尺寸: 31" 宽 x 8" 深 x 30" 高



TECHNICAL ASSOCIATES
OVERHOFF TECHNOLOGY

7051 Eton Ave., Canoga Park, CA 91303
818-883-7043 (Phone) 818-883-6103 (Fax)

tagold@nwc.net

WWW.TECH-ASSOCIATES.COM

Divisions of



US NUCLEAR CORP.

GAMMA SILT & PARTICULATE RAW WATER MONITOR
for
DRINKING WATER FILTRATION & WASTEWATER SYSTEMS

砂石/粒子未净化水监测仪

饮用水过滤&废水监测系统

Model Series– RAWA-GP (Gamma) & RAWA-BGP (Beta Gamma)

Shipping Weight: Standard unit: 20 Kg –

装运重量: 标准件20公斤

SENSITIVITY CHART:

GAMMA DETECT	PAG LEVEL	LOWER LIMIT of SENSITIVITY TIME 30 Min 24 Hr	TOP OF RANGE	MAINTENANCE TIME	MAINTENANCE ACTION
Co-58	247,000 pCi/l	1,000 pCi/l 250 pCi/l	2×10^7 pCi/l	3-6 mos	Simple MCA check Replace Particulate Filter as needed
C-60	54,000 pCi/l	400 pCi/l 100 pCi/l	2×10^7 pCi/l	3-6 mos	Simple MCA check Replace Particulate Filter as needed
I-131	8,500 pCi/l	600 pCi/l 150 pCi/l	2×10^7 pCi/l	3-6 mos	Simple MCA check Replace Particulate Filter as needed

BETA DETECT	PAG LEVEL	LOWER LIMIT of SENSITIVITY TIME 30 Min 24 Hr	TOP OF RANGE	MAINTENANCE TIME	MAINTENANCE ACTION
Cs-137	13,600 pCi/l	1,200 pCi/l 200 pCi/l	2×10^7 pCi/l	3-6 mos	Replace Particulate Filter as needed
K-40	30,000 pCi/l	600 pCi/l 100 pCi/l	2×10^7 pCi/l	3-6 mos	Replace Particulate Filter as needed
Sr-90	6,500 pCi/l	200 pCi/l 15 pCi/l	2×10^7 pCi/l	3-6 mos	Replace Particulate Filter as needed

PARTICULATE FILTER MAINTENANCE:

- ❖ A full particulate filter will alarm the flow meter and need to be flushed, cleaned, or replaced.
- ❖ During periods of exceptionally high turbidity the particulate filter will need to be flushed, cleaned, or replaced daily.
- ❖ 高浊度情况下粒子过滤器网将需要每天冲洗，清洁或更换。



**TECHNICAL ASSOCIATES
OVERHOFF TECHNOLOGY**

7051 Eton Ave., Canoga Park, CA 91303
818-883-7043 (Phone) 818-883-6103 (Fax)

tagold@nwc.net

WWW.TECH-ASSOCIATES.COM

Divisions of



US NUCLEAR CORP