



U.S. ENVIRONMENTAL PROTECTION AGENCY
 Office of Pesticide Programs
 Antimicrobials Division (7510P)
 1200 Pennsylvania Ave., N.W.
 Washington, D.C. 20460

EPA Reg. Number:

91243-1

Date of Issuance:

6/19/19

NOTICE OF PESTICIDE:

Registration
 Reregistration
 (under FIFRA, as amended)

Term of Issuance:

Unconditional

Name of Pesticide Product:

Fortress Mussel Control Systems

Name and Address of Registrant (include ZIP Code):

Kim Davis
 Consultant/Agent
 ONG Consulting LLC
 2513 Winners Circle
 Heath, TX 75126

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Antimicrobials Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is unconditionally registered in accordance with FIFRA section 3(c)(5) provided that you:

1. Submit and/or cite all data required for registration/reregistration/registration review of your product when the Agency requires all registrants of similar products to submit such data.
2. The data requirements for storage stability and corrosion characteristics (Guidelines 830.6317 and 830.6320) are not satisfied. A one year study is required to satisfy these data requirements. You have 18 months from the date of registration to provide these data.

Signature of Approving Official:

E. Miederhoff
 Eric Miederhoff, Product Manager 31
 Regulatory Management Branch I
 Antimicrobials Division (7510P)
 Office of Pesticide Programs

Date:

6/19/19

3. Make the following label changes before you release the product for shipment:
 - Revise the EPA Registration Number to read, “EPA Reg. No. 91243-1.”
4. Submit one copy of the revised final printed label for the record before you release the product for shipment.

Should you wish to add/retain a reference to the company’s website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product’s label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA’s Office of Enforcement and Compliance.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records. Please also note that the record for this product currently contains the following CSFs:

- Basic CSF dated 04/24/2019

The alternate brand name “Fortress MC Systems” has been added to the product record.

If you have any questions, you may contact Joseph Daniels at (703) 347-8669 or via email at Daniels.joseph@epa.gov

Enclosure

Fortress Mussel Control Systems

{ABN: Fortress MC Systems}

Copper ions are an effective means for controlling/preventing fouling due to mussels, clams, bryozoan and Mollusks in general. This product is for use in controlling and preventing Zebra Mussels, Quagga Mussels, Asiatic Clams and Bryozoa colonization (fouling) within water conveying equipment and structures (infrastructure) for transporting water to publicly owned (regulated) water treatment facilities including pipes, aqueducts, intakes, intake screens, pumping stations, penstocks, weirs, gatehouses and penstocks.

Treated water for use as drinking water must receive additional and separate potable water treatment.

This product is **not** acceptable for treating or disinfecting potable, sewage or grey water.

Active Ingredient:

Copper (as metallic) 99.8%

Other Ingredients 0.2%

Total 100.0%

Treated Water May Contain 2-900 ppb Free Metallic Copper Ions

Keep Out of Reach of Children

CAUTION

See back panel [below] for additional Precautionary Statements.

Net Weight: _____ lb

EPA Reg. No. 91243-R EPA Est. 91243-TX-1

Manufactured by:

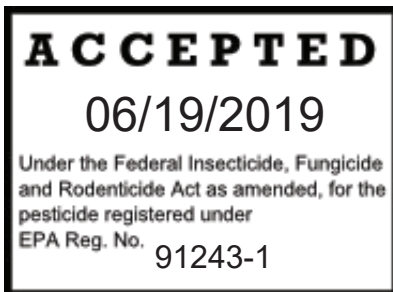
ONG Consulting LLC
2513 Winners Circle
Heath, TX 75126

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

When used as directed, Fortress Mussel Control Systems provide effective control of zebra mussels, quagga mussels, Asiatic clams and Bryozoan in raw water intake systems. Before using this product, refer to your site's engineering, technical and site plans; and read the entire label and Fortress Mussel Control Systems' Installation and Operations Manual.

Fortress Mussel Control Systems have been engineered with an industrial-grade electrolysis process for on-site generation of an ionized copper ions solution using only water, salt (conductivity adjuster/modifier) and electricity. The ionized solution is injected at the entrance of the intake resulting in up to 900 ppb copper ions in raw water, prohibiting mussel, clam and bryozoan fouling. **Do not exceed 1 ppm of free metallic copper (ambient plus applied) in treated water.** See Installation and Operations Manual for additional information.



Fortress Mussel Control Systems may be used proactively to protect infrastructure from colonization when the presence of foulants (adults, larvae, juvenile or mussel DNA) has been detected. Fortress Mussel Control Systems may be used reactively to cure a colonized infrastructure when the adult/juvenile mussels are present. If a colony is already established, continuously treat raw water with the Fortress Mussel Control System to maintain 500-900 ppb free metallic copper. **Do not exceed 1.0 ppm (1000 ppb) free metallic copper (ambient + applied) in treated water.** After decolonization maintain a continuous preventative dose of approximately 50 ppb in treated water.

Storage and Disposal

Do not contaminate potable water, food or feed by storage or disposal.

Storage: Store electrode assembly in a cool, dry place away from children. **Pesticide Disposal:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. **Container Handling:** Non-refillable container; do not reuse or refill container. Do not reuse product; when spent, do not attempt to disassemble, recharge or refill the Ionization Chambers. Return spent Ionization Chambers to ONG Consulting LLC for reconditioning and recycling.

Precautionary Statements Environmental Hazards

This copper product is toxic to fish and aquatic organisms. Unlike most organic pesticides, copper is an element and will not break down in the environment and will therefore accumulate in sediment with repeated applications. Copper is a micronutrient, but its pesticidal application rate exceeds the amount of copper needed as a nutrient.

(Marketing claims may be selected from the following:)

- Fortress Mussel Control Systems are engineered to proactively protect your raw water intake and piping system from macrofouling due to colonization of Zebra Mussels, Quagga Mussels, Asiatic Clams and Bryozoa.
- Fortress Mussel Control Systems use an industrial-grade electrolysis process for on-site generation of an ionic solution utilizing only water and electrolysis.
- The Fortress Mussel Control Systems' treatment process is simple and straight-forward: the only utilities required are water and electricity.
- The Fortress Mussel Control Systems' treatment process does not involve use of liquid chemicals, thereby reducing/ eliminating risks of chemical exposure.
- Fortress Mussel Control Systems do not require modification of your existing water treatment system.
- The Fortress Mussel Control Systems' treatment process does not require detoxification of treated water.
- The Fortress Mussel Control Systems' treatment process does not involve liquid chemical use in your raw water or negatively impact your existing treatment train.
- Fortress Mussel Control Systems generate bio-available copper ions – Cu⁺² (Cupric Copper) [on site and on demand, thereby eliminating the cost associated with acquiring, transporting, storing and mixing of liquid chemicals].
- Fortress Mussel Control Systems are compact allowing installation in tightly spaced pump houses.
- The ionized solution injected at the entrance of raw water intake results in up to 900 ppb Cu ions in treated raw water prohibiting/reducing/controlling mussel, clam and bryozoan colonization.
- The Fortress Mussel Control Systems' copper ions are an effective molluscicide.
- The Fortress Mussel Control Systems' copper ionization treatment process is an effective method for controlling/ preventing/reducing fouling due to mussels, clams and bryozoan.
- The Fortress Mussel Control Systems' copper ionization treatment process is a cost-effective method for controlling/ preventing/reducing fouling due to mussels, clams and bryozoan.
- The Fortress Mussel Control Systems' copper ions are effective and control mussels at all crucial life growth stages: larvae, veligers, juvenile and adults.
- The Fortress Mussel Control Systems' copper ions injected at the intake prevent/alleviate fouling at the intake and downstream of the injection point.

- Continuous injection of Fortress Mussel Control Systems' copper ions (5-900 ppb) results in death and exfoliation of adherent mussels at the injection point and downstream of the injection point.
- The Fortress Mussel Control Systems' copper ions interfere with growth and development of mussel/foulants at all life stages.
- The Fortress Mussel Control Systems' copper ions poison and immobilize veligers.
- Mussels (foulants) detect the presence of the Fortress Mussel Control Systems' copper ions in water (5-900 ppb) and stop feeding.
- The presence of the Fortress Mussel Control Systems' copper ions (5-900 ppb) prevent mussels from feeding, leading to starvation and death.
- The presence of the Fortress Mussel Control Systems' copper ions (5-900 ppb) interfere with proteins in mussels' byssal threads, weakening their ability to anchor on surfaces.
- The presence of the Fortress Mussel Control Systems' copper ions (5-900 ppb) interfere with cellular processes leading to death of mussels (larvae, veligers, juvenile and adults).
- The Fortress Mussel Control Systems' copper ions injected at the intake are removed in subsequent water treatment processes such as sedimentation, flocculation and filtration.
- Copper ions injected at the intake by Fortress Mussel Control Systems are removed by conventional water treatment process.
- The Fortress Mussel Control Systems' copper ions injected at the intake are below EPA's Copper MCL of 1300 ppb.
- The ionized solution injected at the entrance of raw water intake results in up to 900 ppb Cu ions in raw water, enhancing control of algae in subsequent water treatment processes.
- The ionized solution generated by Fortress Mussel Control Systems and injected in to raw water does not interfere with subsequent water treatment processes.
- Fortress Mussel Control Systems do not require modification to existing water treatment train.
- The ionized solution injected at the entrance of raw water intake results in up to 900 ppb Cu ions in raw water, enhancing control of algae, microbial induced corrosion and organic matter in subsequent water treatment processes.
- The Fortress Mussel Control Systems' treatment process is fully compatible with existing water treatment processes.
- Unlike with many liquid chemicals, Fortress Mussel Control Systems have a lower infrastructure cost; no need for storage tanks, liquid chemical mixing apparatus, special piping, metering pumps, fumes hoods and exhausts, among other risk- and safety-mitigation requirements.
- Fortress Mussel Control Systems: Protection Delivered.
- Fortress Mussel Control Systems are exclusively equipped with CuDose™ Technology that detects crucial water conditions in real time, thereby providing precise and consistent ion injection.
- CuDose™ Technology is PLC (Programmable Logic Controller) automated, constantly and automatically monitoring treatment, raw water and controller environmental parameters and functional set-points to maintain precise and consistent copper ions dose rate.
- Molluscicidal action is attributed to positively-charged copper ions.
- Fortress Mussel Control Systems generate positively-charged copper ions that are self-dispersive.
- The Fortress Mussel Control Systems' ionization process generates copper ions that coats interior surfaces, denying mussels a suitable surface for settlement.
- The Fortress Mussel Control Systems' ionization process generates copper ions that deny mussels a suitable surface for settlement.
- Copper ions generated by Fortress Mussel Control Systems repel mussels, clams, bryozoan and mollusks in general.
- CuDose™ Technology enables Fortress Mussel Control Systems to dose pace treatment to seamlessly and automatically match your raw water flow rate.
- CuDose™ Technology enables Fortress Mussel Control Systems to eliminate the risk of over/under treatment.

- CuDose™ Technology enables Fortress Mussel Control Systems to effectively maintain a consistent treatment and ion dosing rate, even in changing water parameters.
- Fortress Mussel Control Systems feature local or remote monitoring and management via internet and have built-in flexibility for easy integration with existing plant management systems.
- The Fortress Mussel Control Ionization Chamber houses a precisely engineered electrolytic ionization cell (E₂IC).
- The E₂IC optimizes water flow for precise and consistent ion generation, eliminates electrode scaling and prolongs anode life.
- The E₂IC consists of certified high purity (99.96% pure) copper anodes.
- Fortress Mussel Control Ionization Chambers are compact and modular, each chamber can treat up to 20 MGD.
- Fortress Mussel Control Chambers can be “ganged” together to treat even higher flows.
- The Fortress Mussel Control Ionization Chamber features a grooved-end connections/fastening system for quick and easy servicing.
- The Fortress Mussel Control Ionization Chamber features a grooved-end connections/fastening system that does not require power tools to remove or install.
- Fortress Mussel Control Ionization Chambers are compact, allowing for easy servicing of anodes without the need for overhead-clearance and overhead lifting hoists.
- Fortress Mussel Control Systems are the most cost effective antifouling process available.
- Fortress Mussel Control Systems: No Liquid Chemicals, No Hassles, No Detox needed.
- Fortress Mussel Control Systems provide protection against mollusk colonization of raw water intakes, piping and infrastructure.

Limited Warranty and Disclaimer

The directions for use of this product are believed to be adequate and must be followed carefully, but it is impossible to eliminate all risks inherently associated with the use of this product. Ineffectiveness or other unintended consequences may result due to factors such as power or utility interruption, incorrect use or application or water stagnation or flow issues resulting from an error in the configuration of the plumbing system, all of which are beyond the control of ONG Consulting LLC. To the extent consistent with applicable law, ONG Consulting LLC, the manufacturer, or seller of this product shall not be liable for consequential, special or indirect damages resulting from the use, handling, application, storage or disposal of this product or damages in the nature of penalties and the buyer and user waive any right that they may have to such damages. No agent or employee of ONG Consulting LLC or seller is authorized to amend the terms of this warranty disclaimer or product's label or to make presentations or recommendations different from, or inconsistent with, the approved product label. Fortress Mussel Control Systems are warranted for 1 year against defects in manufacturing, workmanship and materials when installed, commissioned and maintained in accordance with the manufacturer's recommendations. Only approved Fortress Mussel Control Systems parts can be used in order not to void both Fortress Mussel Control Systems' Warranty and EPA product registration.

Fortress Mussel Control Systems

{ABN: Fortress MC Systems}

Installation and Operations Manual



Treated water for use as drinking water must receive additional and separate potable water treatment.

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EPA Reg. No. 91243-__ EPA Est. 91243-TX-1

Manufactured by:
ONG Consulting LLC
2513 Winners Circle
Heath, TX 75126

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Precautionary Statements

Environmental Hazards

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Device Components

Fortress Mussel Control Systems consist of three major components: Engineered Electrolytic Ionization Chamber (E₂IC) Module, Fortress Mussel Control Systems Controller and Piping and Instrumentation.

Fortress Mussel Control Systems E₂IC Module (Ionization Chamber/ Ionization Cell)



- a. Each Engineered Electrolytic Ionization Chamber E₂IC Module consists of at least 99.9% pure certified anodes.
- b. Each E₂IC Module is designed to optimize water flow for precise and consistent ion generation, eliminate scaling and prolonging anode life, while greatly reducing maintenance requirements.
- c. Each E₂IC Module features water channeling vanes at the inlet and outlet thereby reducing pressure drop across the Module.
- d. Each E₂IC Module can treat up to 20 MGD raw water.
- e. Multiple E₂IC Modules can be easily assembled together to treat higher raw water flows.
- f. E₂IC Modules are compact, modular and weigh about 50 lbs, simplifying installation and servicing.
- g. E₂IC Module housing is made of high-quality, rust-free, 316 stainless steel coated with NSF 61 powder coat.
- h. Each E₂IC Module features a grooved-end fastening system that does not require power tools to install or remove during servicing.

Fortress Mussel Control Systems Controller



- a. Fortress Mussel Control Systems Controller can be skid- or wall-mounted and is housed in a NEMA-rated corrosion-proof enclosure.
- b. Fortress Mussel Control Systems Controller has a Password Protected HMI/PLC with Bright-Lit easy-to-read screen.
- c. Fortress Mussel Control Systems Controller allows an operator to input and read parameters, displays operation status and alarms with optional local or remote monitoring, management and communication features.
- d. Fortress Mussel Control Systems Controller is equipped with simple to identify and clearly marked bright LED status indicator lights. Green = Power ON; Red = Fault Condition.
- e. Fortress Mussel Control Systems Controller is provided with keyed locking system that prevents unauthorized entry into the cabinet.
- f. Fortress Mussel Control Systems Controller features an 'ON/OFF' button prominently located for easy accessibility and will not allow cabinet door to open unless in the 'OFF' position.

Piping and Instrumentation



- a. Fortress Mussel Control Systems are compact and have a small footprint with uncompromised construction of the skid using stainless steel.
- b. A non-contacting Digital Flow Meter withstands wear and tear due to solids in raw water and comes with a Bright-Lit local LED screen displaying water parameters such as flow rate, temperature, total volume and flow or no flow conditions.
- c. Piping, 316 Stainless Steel, is blasted and passivated for long-lasting corrosion-free operation.
- d. Features 150# ANSI Inlet/Outlet flange connection for easy and fast plumbing connection.

Electrical and Plumbing Installation

- a. Fortress Mussel Control Systems are compatible with most plant management systems; refer to your site-specific engineering design document, PID drawing, technical specifications and installation instructions accompanying your Fortress Mussel Control System.
- b. Install the controller/skid-mounted unit in an indoor, sheltered area away from direct sources of heat, sunlight, moisture, freezing temperatures and/or chemical fumes.
- c. Supply power to the controller using an electrical circuit with sufficient amperage to accommodate the system peak current draw.
- d. Install all electrical power and plumbing in accordance with all local, state and national codes.

Copper Monitoring

- a. Site Copper Testing
After commissioning, perform site copper testing on a weekly basis and in accordance with your site's NPDES permit. Collect sample at the farthest possible location away from the injection point.
- b. Lab Testing for Copper
Lab testing for copper is the only way to accurately measure copper and reveal whether ion levels are within optimal ranges, and determine whether system adjustments are needed.
- c. Suggested Copper Target Ranges
Copper levels are not to exceed 900 ppb (900 µg/L) or site-specified level.
- d. Site Copper Test Procedure
Refer to Hach DR900 Handheld Colorimeter Copper Test Method 8143 Powder Pillows 1-210 µg/L.

Fortress Mussel Control Systems Log Record				
Month	Week 1	Week 2	Week 3	Week 4
Date/Time				
Raw Water Flow Rate MGD				
Copper Test $\mu\text{g/L}$				
Initials				
Notes/Observations				