



**PLANET FRIENDLY®**  
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## **THREE FOOT KOI with a Dramatic Water Garden Bottom 60,000 Gallons with a Multi-Million Dollar View**

By: Larry Couture

Dale Price had no illusions that a 60,000 gallon pond would operate crystal clear with the “natural” biological filters proposed by local pond builders in the mid 1990’s.

Price knew that as the KOI fish grew he would be violating every pound per gallon rule in the KOI books. With his wife, a veterinarian, he embarked on a one year build and water treatment effort to have one of the most valuable KOI collections in the U.S. displayed in crystal clear water with unique flora on the bottom.

The pond is twelve feet deep, oval in shape with a complete water garden bottom. A small peninsula protrudes so he can ring his liberty bell to summon fish for feeding, often from the hand.

Price first began with a 30 GPM well water turbo system from ECOsmarte to treat his home, irrigation and auto fill needs for the pond. The natural oxygen and ionization chambers for the home resulted in .10 to .15 ppm residual copper going into both his residence and the pond on the replenishment water.

The residual was never measured however in the main pond, probably due to the 2 900lb bubble bead

biological filters. Upon ECOsmarte’s recommendation Price installed 2 Zeolite filters with an ECOsmarte KOI oxygen system to prevent ammonia buildup from the large KOI, harmful both to the KOI and their water garden plants. The CO2 ph injection system from ECOsmarte was also required to keep the pond from reaching the 8.0ph that existed in Price’s well, particularly after the daily KOI feeding. Ph was ultimately maintained in a 7.2 to 7.6 range with carbon dioxide injected 24/7 and even backed up by a sulphuric acid injector that kicked on by sensor when ph levels hit 7.5.

The pond hit 80-90% clarity on a daily basis, still not acceptable for Price and the pond also developed periodic string algae. With his wife’s, the veterinarian, help Price decided to introduce copper to the pond to get rid of the string algae and strive for 95-100% daily clarity in the 12 foot deep pond.

With daily monitoring of the copper levels, .10, .15, .20 and finally .25ppm copper was introduced with the KOI fish monitored. Price reported at .25ppm his fish “were not happy” and levels were scaled back to .15ppm - - enough to eliminate string algae and get clarity to almost “mirror quality”.



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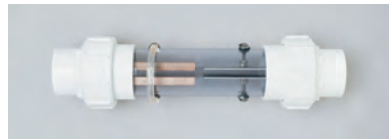
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“The low level copper gives us a view of the Black EPDM liner defects in areas the water garden struggles. It is a dramatic clarity” said Price.

The average do it yourself pond owner can also benefit in simpler pond or stream environments from the scale control, O2 oxygen controlling ammonia levels and the glasspack filter media.

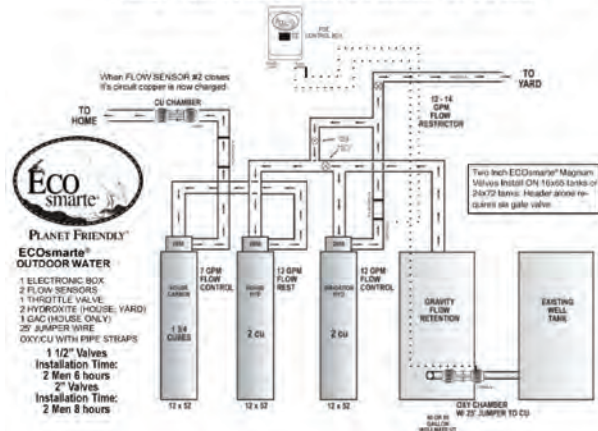


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### POND PRE-TREATMENT

IRRIGATION SYSTEM: 15 to 21 GPM. TWO ACRES, 12 ZONES  
ALL OF YOUR WATER – Indoor and Outdoor, Hot and Cold



### TECHNICAL SPECIFICATIONS

#### MECHANICAL & PLUMBING

Operating Press. Max. 150 PSIG  
Operation Temp. Max. 120° F  
Tank listing and structural integrity requirements only.

OXYGEN ELECTRODES  
Proprietary composite material

IONIZATION ELECTRODES  
100% Pure Copper

#### ELECTRICAL

Input Voltage: 110 to 240 Volts, Specify  
Output Voltage: 100 VA Class UL CSA  
Compliance Power Supply  
GPM: Each Unit 20 GPM to 200 GPM

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Than One Electronics Package and Must Be Quoted.



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