TMDL
TOTAL MAXIMUM DAILY LOAD
Voluntary Compliance Program

March 12, 2014

Mr. Robert Perdue
California Regional Water Quality Control Board
Colorado River Basin Region
73-720 Fred Waring Drive, Suite 100
Palm Desert, CA 92260

Re: Comments to 303(d) List Revisions

Dear Robert:

Thank you for allowing the Imperial County Farm Bureau to comment on the proposed new listing, delisting, and modifications to the Colorado River Basin Regional Water Board 2012 303(d) List. We appreciate the time and effort staff has made to develop revisions to this list and welcome any response to our comments.

CHLORIDE – Proposed for the Alamo & New Rivers and Salton Sea
Of all the new listing proposals for the 303(d) List Chloride is the most onerous. The water used to irrigate the Imperial, Mexicali, and partially, the Coachella Valleys, all comes from the Colorado River, which contains high levels of many types of chloride. Water was first diverted to the Imperial Valley for farming in 1901. Historical accounts of farmland soil quality even back then showed high levels of salts in the soil and many of the areas were not suitable for crop production.

By 1923 farmers were seeing crop production drop as a result of these salts. In some areas the fields were abandoned because of the salt buildup when crops would no longer grow. Between 1923 and 1959 the Imperial Irrigation District, in cooperation with the farmers, installed over 1,400 miles of deep drainage ditches to collect leach water from the surrounding fields to improve the soil quality. However the IID's drainage system did not provide sufficient drainage because there was little lateral movement of the leach water to the drain ditches.

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In 1929 the IID began installing underground tile drainage lines that would collect the leach water, heavily laden with salts, and transport that water to the IID drains. Installation was turned over to private contractors as soon as they were organized and equipped to take over. The end of 1959 had installed over 7,400 miles of tile drainage lines on over half the acreage in the Imperial Valley.

Today it is estimated that over 35,000 miles of tile drainage lines have been installed to remove the salts from the soil by transporting the leach water from the farmer's fields to the IID drainage system, then to the New and Alamo Rivers and eventually to the Salton Sea which was deemed a repository for drainage water by presidential proclamation in the late 1920s.
Chloride levels sampled by the Regional Water Quality Control Board where the New River crosses from Mexico into the United States and again at the New River outlet to the Salton Sea shows chloride levels to be 1.7 times higher at the International Border compared to the outlet of the New River at the Salton Sea. It is therefore reasonable to believe that Mexico is contributing a large amount of the chlorides in the total load ending up in the Salton Sea from the New River.

The proposed standard of 230 mg/L of chloride was used in establishing the WARM Water Quality Criteria/Objective. The highly elevated chloride levels from the Colorado River and chlorides coming from Mexico, shown to be considerably above 230 mg/L, makes achievement of the Standard impossible and will only be exacerbated in coming years as water conservation efforts mandate the farmers reduce the amount of surface runoff which is currently diluting the drainage water.

As for the Salton Sea, an inland saltwater body of water, it seems impractical to even list chloride as an impairment. Chloride levels will only increase as the Sea shrinks in future years. There is no economical or known way to solve this problem.

AMMONIA – Proposed for the New River and Salton Sea
The use of anhydrous ammonia as an agricultural fertilizer has diminished greatly in Imperial Valley in the past five years as a result of more stringent regulations, which are enforced locally by Imperial County CUPA. The predominant nitrogen fertilizer currently used is urea.

In the Mexicali Valley, which drains into the New River, anhydrous ammonia continues to be used extensively in agriculture, especially in the high acreage of cotton as well as many other crops grown there because it is the cheapest form of fertilizer.

The levels of ammonia sampled by the Regional Water Quality Control Board in the New River between 2005 and 2008 at the International Border and at the New River outlet at the Salton Sea show high ammonia levels at the border and much lower ammonia levels at the New River outlet at the Salton Sea. Only one sample out of five from the New River Outlet to the Salton Sea exceeded WARM Water Quality Criteria/ Objective during this period while all six samples taken in the New River at the International border exceeded the WARM Water Quality Criteria/Objective.

This period of sampling was done during a time when farmers in the Imperial Valley used anhydrous ammonia extensively. As mentioned previously, in the past five years the use of anhydrous ammonia as a fertilizer in Imperial Valley has diminished greatly. A farmer directed TMDL for ammonia in Imperial Valley may not have any significant affect on the amounts of ammonia currently found in the New River since farmers for the most part, have switched to urea as a source of nitrogen fertilizer.

BIFENTHRIN IN THE NEW RIVER

Bifenthrin belongs in the family of synthetic pyrethroids. Its chemical structure is loosely based on pryrethrin, a naturally occurring insecticide that is extracted from chrysanthemum flowers.

In the United States its major use is for control of imported Red Fire Ants as well as a broad range of insects found in cotton, vegetables, berries, hops and sweet corn. It is also a valuable insecticide used to control mosquitoes, which are vectors of malaria.

The major use of Bifenthrin in Imperial County is for the control of mites and insects in broccoli, sweet corn, rapini, head lettuce, cauliflower, cabbage, and cantaloupes. These crops account for 94% of its use. Broccoli and sweet corn alone accounts for 61% of bifenthrin use in Imperial County.

Farmers who farm in the Imperial Valley as well as the Mexicali Valley in Mexico state that bifenthrin is a common insecticide for many crops including large acreages of cotton and vegetables due to its relatively low cost.

Bifenthrin is a federally restricted material in California agricultural settings due to its extremely high toxicity to fish and other aquatic organisms however it is one of the most commonly used insecticides for home and garden use and is not restricted for those uses. Farmers and farm service applicators currently follow all the safety precautions required by the bifenthrin label and take every precaution to keep the drift out of the drain ditches and canals when applying the material to their crops.

Regional Water Quality Control Board samples of bifenthrin found in the New River show that levels at the outlet to the Salton Sea are only 58% of the levels found at the International Border where the New River enters the Imperial Valley. This would suggest that a large percentage of the bifenthrin found in the New River originates in Mexico.

The current BMPs used by Imperial County Voluntary Silt/Insecticide TMDL by farmers that reduces the amount of silt leaving their fields as surface runoff, as well as the applicators following the instructions on the label should reduce the movement of silt and pesticides off their fields and should be sufficient to reduce the amount of bifenthrin moving into the IID drains.

CYPERMETHRIN IN THE NEW RIVER

Like bifenthrin, cypermethrin belongs in the family of synthetic pyrethroids and has many of the same characteristics. Its chemical structure is loosely based on pryrethrin, a naturally occurring insecticide that is extracted from chrysanthemum flowers.

In the United States over 90% of cypermethrin's use is for the control of insects in cotton which is no longer grown in the Imperial County but is grown extensively in the Mexicali Valley as reported by farmers who farm in both the Imperial Valley and Mexicali Valley in Mexico. It is also used extensively for the control of cockroaches, fleas, and termites in structural use in the United States including Imperial County.

In the Mexicali Valley cypermethrin is a common insecticide for many crops including large acreages of cotton and vegetables due to its relatively low cost. In Imperial County cypermethrin is used for the control of insects found in alfalfa, sugar beets, sweet corn, leaf lettuce, head lettuce, dry onions, and broccoli. 49% of cypermethrin's use is for the control of insects in alfalfa and sugar beets.

Like bifenthrin, cypermethrin is a restricted material in California agricultural settings due to its extremely high toxicity to fish and other aquatic organisms. . Farmers and farm service applicators currently follow all the safety precautions required by the cypermethrin label and take every precaution to keep the drift out of the drain ditches and canals when applying the material to their crops.

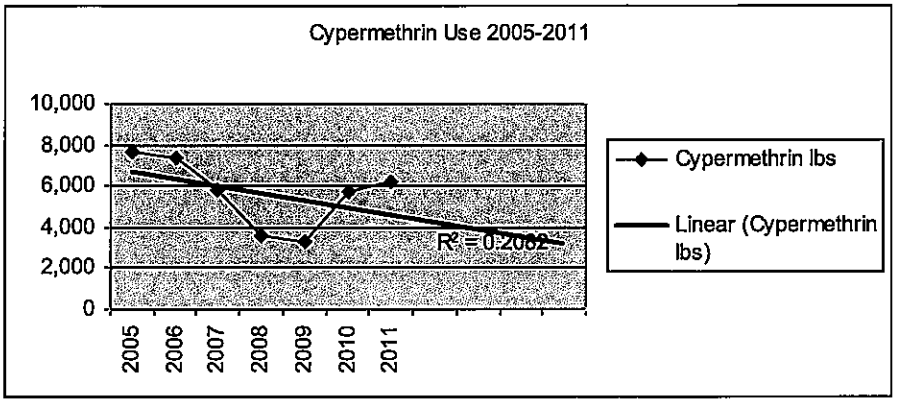
Sampling by the Regional Water Quality Control Board of cypermethrin found in the New River show that levels at the outlet to the Salton Sea are 3 to 14 times lower than the levels found at the International Border where the New River enters the Imperial Valley from Mexico. This would suggest that a large percentage of the cypermethrin found in the New River originates in Mexico.

As with most synthetic pyrethroids, cypermethrin breaks down rather rapidly in the environment and has a half-life of only four to twelve days.

Table 1 shows the yearly use of cypermethrin in pounds of active ingredient between 2005 and 2011 as reported by the Department of Pesticide Regulation. A linear regression chart shows the use of cypermethrin is on the decreased even though there was an increase in 2010 and 2011. This increase in recent years is driven by crop changes, new pests that show resistance, and regulatory pressure forcing pesticide manufactures to discontinue many of their products.

Table 1– Cypermethrin Use in Imperial County 2005-2011

2005	2006	2007	2008	2009	2010	2011
7,624	7,364	5,811	3,558	3,316	5,697	6,245



Studies have shown that cypermethrin breaks down rather rapidly in the environment. The current BMPs used by Imperial County Voluntary Silt/Insecticide TMDL by farmers which reduces silt leaving their field in the surface runoff water, as well as the applicators following the instructions on the label, should reduce the movement of silt and pesticides off their fields and should be sufficient to reduce the amount of cypermethrin moving into the IID drains.

MALATHION IN THE ALAMO RIVER

Malathion is an organophosphate first registered for use in the United States in 1956. It is a common insecticide used in agriculture and around people's homes as well as for public health mosquito control and fruit fly eradication. Malathion may also be found in some special shampoos for treating head lice in humans.

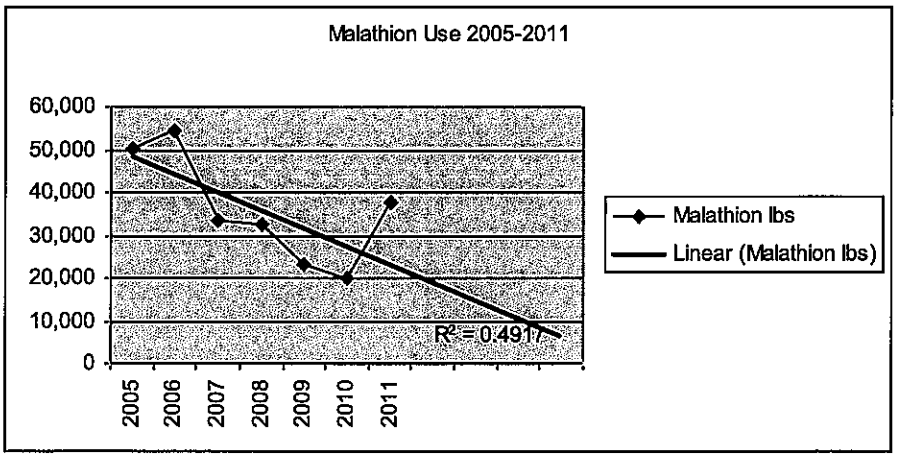
In the Imperial Valley 93% of the malathion is used to treat insects in alfalfa. The rest is spread out over broccoli, carrots, head lettuce, and leaf lettuce.

Sampling by the Regional Water Quality Control Board along the entire length of the Alamo River show that levels increase as they move towards the river's outlet at the Salton Sea.

Table 2 shows the yearly use of malathion in pounds of active ingredient between 2005 and 2011 as reported by the Department of Pesticide Regulaton. A linear regression chart shows the use of malathion has been on the decrease since 2006 but showed a sharp rise in 2011. The trend though shows a decrease in use. This increase is driven by crop changes, new pests that show resistance, and regulatory pressure forcing pesticide manufactures to discontinue many of their products. As newer more environmentally friendly pesticides are registered for use in the Imperial Valley, which are successful in reducing the target pests, the use of malathion should decline.

Table 2 – Malathion Use in Imperial County 2005-2011

2005	2006	2007	2008	2009	2010	2011
50,327	54,614	33,483	32,647	23,047	19,859	37,844



The current BMPs used by Imperial County Voluntary Silt/Insecticide TMDL by farmers as well as the applicators following the instructions on the label should reduce the movement of silt and pesticides off their fields and should be sufficient to reduce the amount of malathion moving into the IID drains.

Conclusion

Imperial Valley farmers have always strived to be excellent stewards of their land and the environment. Current Silt/Pesticide TMDLs implemented by the farmers have proven to be the most successful TMDLs in California if not the nation. The Imperial County Farm Bureau and farmers in the Imperial Valley will continue to be leaders in protecting our environment and doing our utmost to reduce impairments to the waterways in the Imperial Valley.

Thank you in advance for your consideration of our comments. Please feel free to contact me if you have any questions.

Linsey J. Dale
Executive Director
Imperial County Farm Bureau